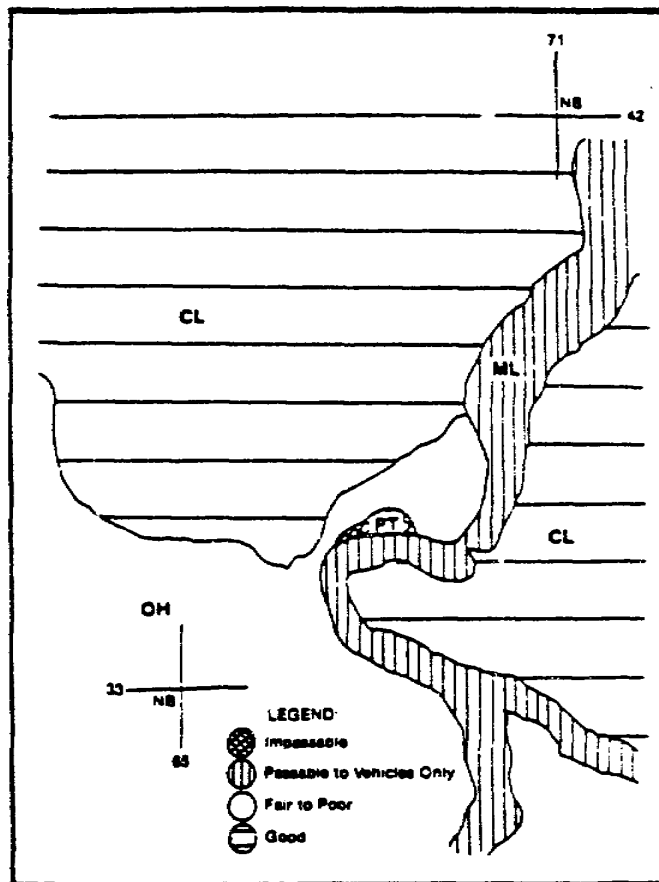


US ARMY INTELLIGENCE CENTER
PREPARE ANALYSIS OF THE
BATTLEFIELD AREA



THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM

A
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ANALYSIS OF THE BATTLEFIELD AREA

Subcourse Number IT 0566

EDITION B

US Army Intelligence Center
Fort Huachuca, AZ 85613-6000

8 Credit Hours

Edition Date: September 1998

SUBCOURSE OVERVIEW

This subcourse is designed to teach you the fundamentals in preparing the analysis of the battlefield area. Contained within this subcourse are instructions on how to prepare the analysis of the battlefield area. Furthermore, it includes the format for the analysis, purpose and limiting considerations, general description, military aspects, and effects of the characteristics of the area.

There are no prerequisites for this subcourse.

This subcourse reflects the doctrine which was current at the time the subcourse was prepared.

Unless otherwise states, the masculine gender of singular pronouns is used to refer to both men and women.

TERMINAL LEARNING OBJECTIVE:

ACTION: You will be able to prepare a written analysis of the battlefield area.

CONDITION: You will have access to extracts from FM 34-3, FM 34-130, and FM 101-5.

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LESSON 1

ANALYSIS OF THE BATTLEFIELD AREA IN GENERAL

CRITICAL TASKS: 301-336-1100
301-372-2050
301-372-3050

LESSON DESCRIPTION:

In this lesson you will learn to describe the analysis of the battlefield area in general, and its format.

TERMINAL LEARNING OBJECTIVE:

- TASK:** Describe the analysis of the battlefield area in general and the format used.
- CONDITION:** You will be given access to extracts from FM 34-3, FM 34-130, and FM 101-5.
- STANDARD:** Description of the analysis of the battlefield area in general and its format will be in accordance with FM 34-3, FM 34-130, and FM 101-5.
- REFERENCES:** The material contained in this lesson was derived from the following publications:
- FM 34-3.
 - FM 34-130.
 - FM 101-5.

INTRODUCTION

Battlefield areas are important to the intelligence analyst because they contain the enemy forces, weather, and terrain about which the commander needs intelligence to make sound tactical decisions. The analysis of the battlefield area is a study to determine the effects of the battlefield areas on the general courses of action that the enemy and friendly forces may adopt. The G2 has primary staff responsibility for initiating, coordinating, and ensuring completion of the analysis.

PART A: THE BATTLEFIELD AREA

1. Commanders consider the battlefield area in terms of the time and space necessary to defeat an enemy force or complete an operation before the enemy can reinforce. They view the battlefield as having two distinct areas (Figure 1-1):

- Area of Operations (AO).
- Area of Interest (AI).

a. The AO is that portion of an area of conflict necessary for military operations. The AO is assigned by the next higher commander and designated by lateral and rear boundaries. It carries with it the authority and responsibility to conduct operations therein. The commander must coordinate with adjacent commanders before conducting maneuver and fire support (FS) activities outside the designated AO.

b. The AI is that area of concern to the commander which includes the AO and areas adjacent thereto. It includes areas forward of, and to the flanks and rear of the AO. It encompasses areas either occupied by enemy forces that could jeopardize friendly mission accomplishment and/or which includes the objectives of friendly current or planned operations.

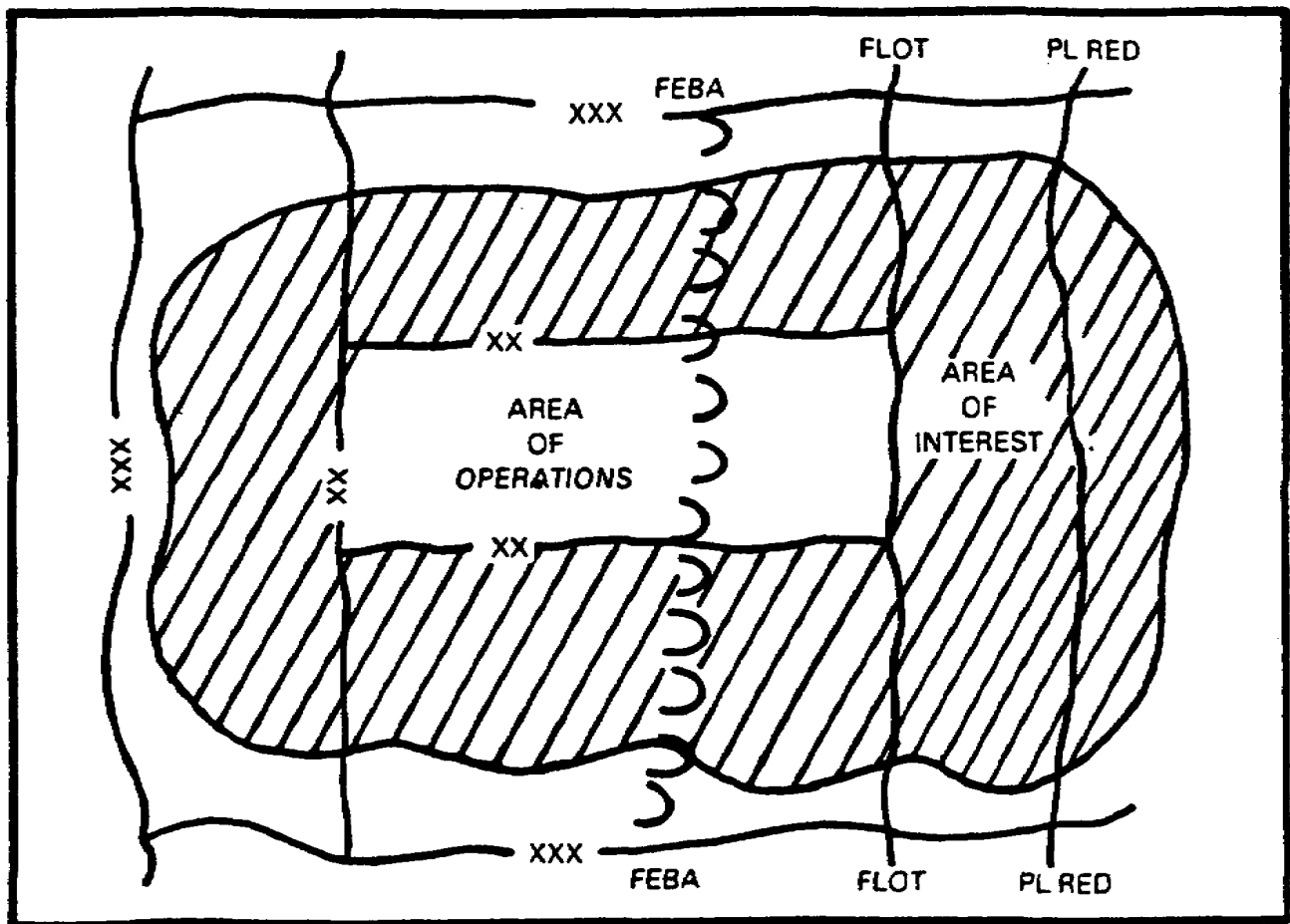


Figure 1-1. Battlefield areas.

2. Each commander determines the unit's own AI. The commander generally relies on higher headquarters and adjacent units to provide information and intelligence about enemy forces in that area.
3. Battlefield areas are important to the intelligence analyst because they help focus the information requirements of commanders concerning the weather, terrain, and enemy forces from battalion to echelons above corps (EAC). Specific information requirements are dependent on the mission and the tactical situation. Usually, in conventional operations, information requirements (IR) on enemy forces are based on the one-up and two-down formula. Commanders require detailed information about enemy forces at their equivalent levels of command as well as one level above and two levels below their own. For example, brigade commanders need information about enemy regiments (equivalent level), enemy divisions (one-up), and enemy battalions (one down) and companies (two-down). Generally, the enemy forces of concern to each commander are found within the command's AO and AI.

PART B: THE INTELLIGENCE AND ELECTRONIC WARFARE MISSION

1. The intelligence and electronic warfare (IEW) mission includes four major tasks:
 - Situation development.
 - Target development.
 - Electronic warfare (EW).
 - Counterintelligence (CI).
2. Situation development provides commanders with the intelligence they need to make sound tactical decisions. It is a continuing estimate of the situation that projects enemy intentions and the effect of the weather and terrain. Situation development helps commanders—
 - a. Find and follow enemy forces.
 - b. Determine enemy capabilities, vulnerabilities, and intentions.
 - c. Identify the enemy main effort.
 - d. Determine how the weather and terrain will affect friendly and enemy operations.
 - e. Detect opportunities to exploit enemy weaknesses and seize or retain the initiative.
 - f. Assess the relative value of enemy combat systems, which serves as a basis for selecting high value targets (HVTs).
3. Target development provides combat information, targeting data, and correlated target information which support the commander's tactical plans. It focuses on high payoff targets (HPTs) which have been selected, through the targeting efforts of the G2 or S2, the G3 or S3, and the fire support element (FSE), and approved by the commander. Target development identifies, locates, and tracks HPTs until they are neutralized. Target development operations must provide sufficiently accurate targeting data to attack by fire, maneuver, or electronic means.

NOTE: Situation and target development provide the intelligence required to fight the operation. Both are distinct tasks, but are interrelated and totally integrated to provide an accurate picture of the battlefield.

4. Electronic warfare (EW) exploits, disrupts, and deceives the enemy command and control (C²) system while protecting friendly use of communications and noncommunications systems. It is a significant force multiplier when integrated and employed with fire and maneuver. EW consists of the following functions:

- a. EW support (ES), which provide commanders the capability to intercept, identify, and locate enemy emitters.
- b. Electronic attack (EA), which provide commanders the capability to disrupt enemy use of the electromagnetic spectrum.
- c. Electronic protection (EP), which is used to protect friendly command, control, and communications (C³) systems against enemy radioelectronic combat (REC) activities.

5. Counterintelligence (CI) includes specific actions which support the protection of the friendly force. Enemy commanders, to succeed against friendly forces, must employ all-source analysis systems to collect information about friendly forces. Depriving enemy commanders of vital information about friendly forces is crucial to friendly success on the battlefield. CI enhances the operations security (OPSEC) of the command by supporting the following actions:

- a. Countering the hostile intelligence threat.
- b. Safeguarding the command from surprise.
- c. Deceiving the enemy commander.
- d. Countering enemy sabotage, subversion, and terrorism.
- e. Developing essential elements of friendly information (EEFI).

PART C: FRIENDLY COURSES OF ACTION

1. The intelligence analyst bases the analysis of the battlefield area on the commander's mission statement. When the prehostility intelligence preparation of the battlefield (IPB) analysis nears completion, the G2 uses all available data and analysis to determine the effects of the characteristics of the battlefield area on both friendly and anticipated enemy capabilities and courses of action.

2. Written and oral analysis. An analysis of the battlefield area is prepared at all echelons. A written analysis is normally completed only at corps and EAC to support projected operations. At division, a written analysis may be prepared for projected operations, such as airborne operations. Most division operations, however, will use the corps analysis of the battlefield area supplemented by IPB information pertinent to the division. Also, at division and below, an abbreviated analysis can be given orally.

3. Documentation. The size of the analysis of the battlefield area increases as the location of military operations changes from a built-up area to a more remote area on which little or no documentation is available.
4. Frequency of preparation. An analysis of the battlefield area is required for each mission. It may involve the preparation of an entirely new analysis or the updating of an existing one. It is started well in advance of hostilities and it is based on the intelligence officer's anticipation of future operations. Upon receipt of an actual mission, the analysis must be reevaluated. It must be prepared and sent out early to all subordinate units to apply the information in their areas of responsibility.
5. Sources of information. An analysis of the battlefield area relies on different sources of information for the data used in the study. They include:
 - a. Analysis performed by higher or other headquarters for the same area.
 - b. G3 missions and courses of action.
 - c. G5 information on sociology, government, economics, and psychology.
 - d. Engineer terrain studies.
 - e. Staff weather officer (SWO) operational weather forecasts and climatic data, to include light data.
 - f. Provost marshal (PM) analysis of route reconnaissance and information on our rear area activities.
 - g. Fire support coordinator (FSCOORD) enemy fire support capability data.
 - h. Unconventional warfare (UW) section (normally found in the J2 at joint task force level) information from areas not under control of friendly forces.
 - i. Maps, imagery, technical reports, and aerial and ground reconnaissance reports.
 - j. National intelligence surveys.
 - k. Locally produced studies and periodicals.

PART D: FORMAT FOR THE ANALYSIS OF THE BATTLEFIELD AREA

Figure 1-2 shows an analysis of the battlefield area report format. It consists of heading information, four main paragraphs, and ending data. The separate elements of the four main paragraphs are described in detail in the remainder of this subcourse.

NOTE: Format for paragraphs and subparagraphs is standard; however, items under sub-subparagraphs can differ.

(CLASSIFICATION)

Copy no ___ of ___ copies
Headquarters
Place
Date, time, and zone
Message Reference No ____

ANALYSIS OF THE BATTLEFIELD AREA NO ____

Reference: Maps (series number, sheet(s), edition, scale), charts, or other appropriate documents.

1. PURPOSE AND LIMITING CONSIDERATIONS.

a. Purpose.

b. Mission.

2. GENERAL DESCRIPTION OF THE AREA.

a. Climate or Weather Conditions.

(1) Climate.

(2) Weather, weather forecast.

(a) Precipitation.

(b) Fog.

(c) Temperature.

(d) Wind.

(e) Cloudiness.

(f) Atmospheric pressure.

(g) Moon.

(h) Light data.

NOTE: Humidity and visibility data may also be added.

(CLASSIFICATION)

Figure 1-2. Format for the analysis of the battlefield area.

(CLASSIFICATION)

b. Terrain.

- (1) Relief and drainage systems.
- (2) Vegetation.
- (3) Surface materials.
- (4) Artificial (manmade) features.

c. Other Characteristics.

- (1) Sociology.
- (2) Economics.
- (3) Government.
- (4) Psychology.

3. MILITARY ASPECTS OF THE AREA.

a. Tactical Aspects.

- (1) Observation and fields of fire (FofFs).
 - (a) Weather conditions.
 - (b) Relief.
 - (c) Vegetation.
 - (d) Artificial features.
- (2) Concealment and cover.
 - (a) Weather conditions.
 - (b) Relief.
 - (c) Vegetation.
 - (d) Artificial features.

(CLASSIFICATION)

Figure 1-2. Format for the analysis of the battlefield area (continued).

(CLASSIFICATION)

(3) Obstacles.

(a) Relief.

(b) Vegetation.

(c) Surface materials.

(d) Artificial features.

(4) Key terrain features.

(5) Avenues of approach.

(a) Available to enemy into our position.

(b) Available to us into enemy's position.

b. Combat Service Support Aspects.

(1) Personnel.

(2) Logistics.

(3) Civil-military operations (CMO).

4. EFFECTS OF CHARACTERISTICS OF THE AREA.

a. Effect on Enemy Courses of Action.

(1) Effect on enemy defense/withdrawal.

(2) Effect on enemy attack.

(3) Effect on enemy air/armor.

(4) Effect on enemy use of nuclear weapons/chemical and biological agents.

b. Effect on Own Course of Action.

ACKNOWLEDGE.

OFFICIAL:

MANN
MG

/s/ Foster
FOSTER
G2

ANNEX: A – Climatic Summary
B – Relief Overlay

(CLASSIFICATION)

Figure 1-2. Format for the analysis of the battlefield area (concluded).

LESSON 1

PRACTICE EXERCISE

The following items will test your grasp of the material covered in this lesson. There is only one correct answer for each item. When you have completed the exercise, check your answers with the answer key that follows. If you answer any item incorrectly, study again that part of the lesson which contains the portion involved.

1. Which formula should you use in conventional operations for information requirements on enemy forces?
 - A. One unit up and one unit down.
 - B. One unit up and two units down.
 - C. Two units up and one unit down.
 - D. Two units up and two units down.

2. When should the analysis of the battlefield area be in written format?
 - A. When you are preparing it for battalion.
 - B. When you are preparing it for brigade.
 - C. When you are preparing it for division.
 - D. When you are preparing it for corps.

3. When should you prepare an analysis for the battlefield area?
 - A. For each mission.
 - B. For each tactical aspect.
 - C. For limiting considerations.
 - D. To highlight characteristics.

4. What action should you take once the actual mission is received by the G2 section, and an assumed analysis was previously accomplished?
 - A. Evaluate the request.
 - B. Reevaluate the analysis.
 - C. Disregard.
 - D. Write a new analysis.

5. Which information should you report in paragraph 3a(2)(d) of the analysis of the battlefield area?
 - A. Weather conditions.
 - B. Relief.
 - C. Vegetation.
 - D. Artificial features.

LESSON 1

PRACTICE EXERCISE

ANSWER KEY AND FEEDBACK

<u>Item</u>	<u>Correct Answer and Feedback</u>
1.	B. You should use the one-up and two-down formula in conventional operations for information requirements on enemy forces (page 1-3, para 3, Part A).
2.	D. The analysis of the battlefield should be in written format when you are preparing it for corps and EAC (page 1-4, para 2, Part C).
3.	A. You should prepare an analysis of the battlefield area for each mission (page 1-5, para 4, Part C).
4.	B. You should reevaluate the analysis once the actual mission is received by the G2 section and an assumed analysis was previously prepared (page 1-5, para 4, Part C).
5.	D. You should report artificial features in para 3.a. (2)(d) of the analysis of the battlefield area (page 1-.7, para 3, fig 1-2).

LESSON 2

HEADING, PURPOSE AND LIMITING CONSIDERATIONS, AND GENERAL DESCRIPTION OF THE AREA

CRITICAL TASKS: 301-336-1100
301-372-2050
301-372-3050

OVERVIEW

LESSON DESCRIPTION:

In this lesson you will learn to prepare the heading and paragraphs 1 (purpose and limiting considerations) and 2 (general description of the area) of the analysis of the battlefield area.

TERMINAL LEARNING OBJECTIVE:

- TASK:** Prepare the heading and paragraphs 1 and 2 of the analysis of the battlefield area.
- CONDITION:** You will be given access to extracts from FM 34-3, FM 34-130, and FM 101-5.
- STANDARD:** Heading and paragraphs 1 and 2 of the analysis of the battlefield area will be in accordance with FM 34-3, FM 34-130, and FM 101-5.
- REFERENCES:** The material contained in this lesson was derived from the following publications:
- FM 34-3.
 - FM 34-130.
 - FM 101-5.

INTRODUCTION

You should prepare the analysis of the battlefield area by first describing the heading, followed by paragraph 1, purpose and limiting considerations, and paragraph 2, general description of the area. These items are addressed in this lesson. The remaining two paragraphs are discussed in lessons 3 and 4.

PART A: HEADING DATA

1. The heading includes the following items (Figure 2-1):

- Classification.
- Copy number.
- Preparing unit.
- Official location.
- Date-time group (DTG).
- Message reference number.
- Title line.
- Reference line.
- Time zone indication.

2. Classification.

a. The overall classification of your analysis of the battlefield area must be the highest classification of the information contained therein. For example, you are preparing an analysis at division and using a corps analysis containing an overall classification of SECRET. If the information you are extracting is classified CONFIDENTIAL and no other information contained within your analysis is classified higher, the overall classification of your analysis would be CONFIDENTIAL.

b. The overall classification must be conspicuously marked or stamped at the top and bottom of both the front and back pages in larger than any other lettering.

c. All other pages must also be marked or stamped, top and bottom, with the highest classification of information appearing thereon, to include the designation "UNCLASSIFIED, when appropriate.

d. The three security classification to be used are:

- TOP SECRET.
- SECRET.
- CONFIDENTIAL.

3. Copy number. Enter the copy no _____ of _____ copies assigned by the issuing headquarters. Copy number is used for control purposes. The original copy of the analysis (copy number 1) is normally retained and filed in the G2/S2 section.

4. Preparing unit. Enter the official designation of the office and unit preparing the analysis. For example, if you are assigned to the G2 section, 52d Infantry Division (Mechanized) and preparing the analysis, this entry would be: G2, 52d Inf Div (Mech).

5. Place of issue. Enter the actual location of the preparing headquarters to include the coordinates, state, or country. For example, although your division headquarters may be located in BAD HERSFELD, GERMANY, the 52d Division (your unit of assignment) is located at GERTERODE. Your entry would, therefore, be: GERTERODE (NB4843), GERMANY.

6. DTG. Enter the Date-Time Group including time zone designator. DTG is the time the analysis is signed by your G2 or commander and the effective time of the intelligence estimate

a. The DTG consists of:

- The day, for example, "31."
- The time, for example, "1100."
- The time zone suffix, for example, "T."
- The month, for example, "August."
- The year, for example, "1998."

NOTE: The time zone suffix will depend on your location. The suffix for your location has been predetermined and is included in your unit standing operating procedure (SOP).

b. For example, the above DTG is written as 311100T Aug 1998.

7. Message reference number.

a. This number is used when the analysis is distributed outside the headquarters for the purpose of acknowledgement in the clear. In the tactical situation, it is highly probable the enemy will be monitoring your radio communication. It may even know the purposes of the intelligence products being disseminated from unit to unit. To avoid a security violation, it is essential intelligence products discussed over nonsecure communication lines not be referred to by name. Rather, a message reference number, consisting of a combination of letters and numbers and which in no way refers to the intelligence product, is used.

b. All appended material to the analysis having the same distribution bears the same reference number.

c. The message reference number may be provided by the communications-electronics (C-E) officer, the G2/S2, or by consulting your local unit SOP.

d. For example: BZ49.

8. Title line. The title line identifies the analysis by number consecutive throughout the calendar year. Enter the title line below the heading data block at the left margin.

NOTE: To avoid a security violation, do NOT use this number when acknowledging or discussing the analysis over nonsecure communications. The message reference number should be used in lieu of the estimated number.

9. Reference line. In order to understand the analysis, the recipient/user must obtain the same map sheets used by the originator.

a. The reference will list maps, charts, or other documents required to understand the analysis. References to maps include:

- Map series number, edition (if required).
- Country or geographic area (if required).
- Map sheet number.
- Map sheet name (if required).
- Edition.
- Scale.

b. For example, map series M745, Bad Hersfeld, sheet L5124, edition 2, 1: 50,000.

10. Time zone suffix designator. Pertinent time zone suffix designator should be shown, for example, time zone used throughout the analysis: ALPHA.

NOTE: Time zone suffix designation can be added to the reference line or appear separately under the reference line.

(CLASSIFICATION)

Copy No 1 of 10 copies
52d Inf Div (Mech)
ANSBACH PV 1562, Germany
121503A July 1998
SB2

ANALYSIS OF THE BATTLEFIELD AREA NO 1

Reference: Map, Series M745, Bad Hersfeld, sheet L5124, edition 2, 1:50,000.

Time Zone used throughout the analysis: ALPHA

Figure 2-1. Heading example.

PART B: PURPOSE AND LIMITING CONSIDERATIONS

1. Paragraph 1 of the analysis of the battlefield area is entitled "Purpose and Limiting Considerations."
2. Paragraph 1a is entitled "Purpose." It should contain a statement on the purpose of the analysis and a description of the exact limits of the area to be studied, which is focused upon the mission (stated in subparagraph 1b)(Figure 2-2).
3. Paragraph 1b is entitled "Mission." It should contain a statement about the unit mission and list any considerations that limit the application of the study. Limitations may include time constraints, the commander's plan of action, and the enemy's capabilities (Figure 2-2).

1. PURPOSE AND LIMITING CONSIDERATIONS.

a. Purpose. To analyze the 21st Infantry Division (Mech) area of interest (AI) for terrain factors which would delay enemy forces and would affect movement of US forces to the west bank of the FULDA river. The western border of the AO follows the west bank of the FULDA river from BREITENBACH (NB553455) south to BAD HERSFELD (NB503350), to OBERHAUN (NB510307). The eastern border runs from HOENEBACH (NB660430) to NB675307. The southern border runs from OBERHAUN (NB510307) to WIPPERSHAIN (NB545315), to SCHENKLINGSFELD (NB595302), to RANSBACH (NB642312), to NB675307. The northern border runs from BREITENBACH (NB553455) to WEITERODE (NB570450) to HOENEBACH (NB660430).

b. Mission. To delay in zone, on order, move west to the west bank of the FULDA river. **Limitations.** Information presented has not considered the effects of bombing, shelling, and nuclear detonations.

Figure 2-2. Example of paragraph 1-purpose and limiting considerations.

PART C: GENERAL DESCRIPTION OF THE AREA

1. Paragraph 2 of the analysis of the battlefield area is entitled 'General Description of the Area.' It contains a list of the facts pertinent to the purpose and limiting considerations of the study for use as a basis for succeeding paragraphs.

2. Paragraph 2a is entitled 'Climate or Weather Conditions' and contains information on meteorological conditions.

a. Paragraph 2a (1) covers the climate. This entry is usually attached to the study as an annex and in the form of a climatic summary or climatic study. It includes long-term weather data stated in the form of averages, extremes, and frequency of occurrences for a specified period of time and geographic area.

b. Paragraph 2a(2) covers weather conditions including:

- Precipitation.
- Fog.
- Temperature.
- Relative humidity.
- Cloud conditions.
- Visibility.
- Atmospheric pressure.
- Wind.
- Light data to include moon data, moonrise, and moonset.
- Magnetic phenomena (when appropriate).

NOTE: Paragraph 2a(2) lists data to be considered by aviation units. It is used in calculating aircraft performance and altimeter setting. Light data are always given, as they are necessary for the selection of courses of action. The BMNT and the EENT are the beginning and end, respectively, of enough light for limited visibility. The BMCT and the EECT are the beginning and end, respectively, of adequate light for large scale operations.

c. Weather information will normally be received from the staff weather officer (SWO) of the Air Force weather service detachment that supports units of division size and larger. Current weather data can also be obtained from the forward area limited (weather) observation program (FALOP) prepared by the maneuver battalion or brigade S2, the artillery meteorological section of division artillery, and the aviation unit in support of the division. The following is an example of a weather forecast (Figure 2-3).

EXTENDED PERIOD FORECAST FOR II CORPS VALID FROM 010600Z AUG to 040600Z AUG 19__:

1 AUG: Ceiling and sky condition: 5000 feet (ft) overcast gradually lowering to 1000 ft overcast by 1900. Visibility 5 miles in haze occasionally lowering to 2 miles in rain. Light showers for the period. Winds northeast 3 to 5 knots. Humidity 85 to 100 percent (%). Atmospheric pressure 30.00 inches (990 millibars). Min temp range 50 to 60 degrees (°) F, max 65 to 75° F. 2 AUG: Ceiling and sky condition: 500 to 1000 ft overcast becoming 2000 ft scattered by 1900. Visibility 1 to 2 miles in light rain and fog becoming 7 miles by noon. Rains ending by 1000 hours. Winds northeast 5 to 10 knots warmer. Min temp 55 to 65° F, max 70 to 80° F. Atmospheric pressure 30.15 inches (995 millibars). Humidity 45 to 55%. Aug 3: Sky condition clear, visibility 10 to 15 miles. Winds northeast 15 knots. Atmospheric pressure 30.25 inches (998 millibars). Humidity 25 to 35%. Min temp 55 to 65° F, max 75 to 85° F. Light data: 1 Aug: BMNT 010447Z, BMCT 010507Z; EECT 021847Z, EENT 011907Z. Moon: Rise 012035Z, Set 020956Z. 2 Aug: BMNT 020448Z, BMCT 020508Z; EECT 021845Z, EENT 021905Z. Moon: Rise 022107Z, set 031101Z. Aug 3: BMNT 030500Z, BMCT 030510Z; EECT 031842Z, EENT 031902Z. Moon: Rise 032142Z, set 041203Z.

Figure 2-3. Example weather forecast.

NOTE: You may also find upper air wind data used for radiological fall out predictions. Consult Appendix A for definitions of light columnar headings (BMNT, etc.).

d. The following is an example of how this weather forecast is used to prepare paragraph 2a (Figure 2-4):

2. GENERAL DESCRIPTION OF THE AREA.

a. Climate or Weather Conditions.

(1) Climate (Usually furnished as Annex A, Climatic summary).

(2) Weather conditions.

(a) Precipitation. Rain from 010600Z Aug ending 021000Z Aug. Clearing.

(b) Fog. Early mornings in rain clearing by 1200 hours.

(c) Temperature. Minimum – 50° to 65° F.
Maximum – 65° to 85° F.

(d) Relative humidity. 55 to 100% during rain.
25 to 35% at other times.

(e) Cloudiness. Estimated 100% cloud cover on 01 Aug and until 1200 hours on 02 Aug. Gradually clearing on 02 Aug. Clear on 03 Aug.

(f) Visibility. 01 Aug - 5 miles; 2 miles in rain.
02 Aug – 1 to 2 miles in rain; 7 miles by 1200 hours.
03 Aug – 10 to 15 miles.

(g) Atmospheric pressure. Slowly rising, from 30.00 inches (990 millibars) on 01 Aug to 30.25 inches (998 millibars) on 03 Aug.

(h) Wind. Winds will be from the northeast at 3 to 15 knots.

(i) Light data.

BMNT	BMCT	EECT	EENT	MOONRISE	MOONSET
01 Aug 0447	0507	1847	1907	2035	0956 (02 Aug)
02 Aug 0448	0508	1845	1905	2107	1101 (03 Aug)
03 Aug 0500	0510	1842	1902	2142	1203 (04 Aug)

Figure 2-4. Example of paragraph 2a -climate or weather conditions.

3. Paragraph 2b is entitled "Terrain." It is normally a combination of information and graphic portrayals produced by the engineer staff section and the intelligence analyst a division and above. You should use specially colored maps or overlays to the maximum extent possible to illustrate each of the characteristics and the effect of predicted weather conditions on them. There are four major characteristics of information included under this subparagraph:

- Relief and drainage systems.
- Vegetation.
- Surface materials.
- Artificial (manmade) features.

a. Paragraph 2b(1), relief and drainage systems. These are the basic elements in studying terrain as they clearly indicate the general shape of the ground. Under each characteristic, include facts to assist in subsequent determination of the effects of the characteristic on the use of nuclear weapons, chemical agents, and important devices and equipment used in implementing course of action (do not include here the interpretation of these effects on friendly or enemy possible courses of action). This study includes information on—

- Configuration of the ground, especially considering slopes for personnel and vehicles.
- Critical relief for equipment dependent on line-of-sight (LOS).
- Configuration and conditions of rivers and streams, including depth, width, slope, conditions of banks and bottoms, and location of crossing sites.

NOTE: Named localities are located by grid coordinates the first time they appear in the analysis. Grid coordinates are repeated only if required for ease of reference.

NOTE: The following are relief and drainage examples that may be provided to you by the engineer section. The examples presented are used for illustrative purposes and do not reflect the actual format of drawings that you may receive. Further, the overlays depict only a part of the area of the analysis. In a field situation, you may receive, or possibly have to prepare an overlay that would cover the entire area under study (Figure 2-5).

2b. Terrain.

Ref: Map, Series M745, Bad Hersfeld, Sheet number L5124; 1:50,000.

Map, Series M745, Eisenach West, Sheet number L5126; 1:50,000.

(1) Relief and drainage systems.

(a) Relief (Figure 2-6). Relief in the battlefield area is divided into two general elevations with the higher terrain running north to south throughout the center of the area and with river valleys to the east and west of the higher terrain.

1 FULDA river valley. Elevations in this area drop from south to north and rise from the valley to the east and west. Elevations are similar to those found in the WERRA river valley.

2 WERRA river valley. This valley runs generally north and south in the battlefield area. Elevation in this area is generally between 150 and 300 meters (m) and rises to the east and west.

3 FRIEDEWALD area. The preponderance of the battlefield area is higher terrain which rises from the WERRA river valley to the west to heights of 500-600 m. Major features in the area are a northeast-southwest ridge line in the central northwest portion of the area and individual hill masses in the central and southern regions. Slopes associated with the hill masses and the ridge line exceed 40 percent in some areas.

(b) Drainage (Figure 2-7). Drainage in the battlefield area is generally good and the system is capable of quickly draining light to moderate precipitation. The battlefield area is drained to the east and west by numerous small streams which empty into the FULDA river in the west and the WERRA River in the east. Numerous agricultural irrigation canals carry water to the farmlands in the countryside.

1 FULDA river. The FULDA river is approximately 6-45 m wide and 1-3 m deep. Current is normally slow with a speed of 3-4 kilometers per hour (kmh). After 1-1 ½ hours of heavy rain, depth may increase to 2-4 m and speed may increase to 6-10 kmh. The riverbed is capable of supporting both wheeled and tracked vehicles during crossing. In most areas, riverbeds and banks are favorable for fording.

2 WERRA river. The WERRA river is approximately 20-40 m wide and 1.2-2.5 m deep. Current speed is normally 2-4 kmh. Heavy rains may increase the speed to 3-6 kmh. The riverbeds and banks are capable of supporting wheeled vehicles only.

3 Numerous other small streams flow throughout the area but all are less than 5 m wide and 1 m deep. These streams will not impede movement through the area.

Figure 2-5. Example of paragraph 2b(1) -terrain, relief, and drainage systems.

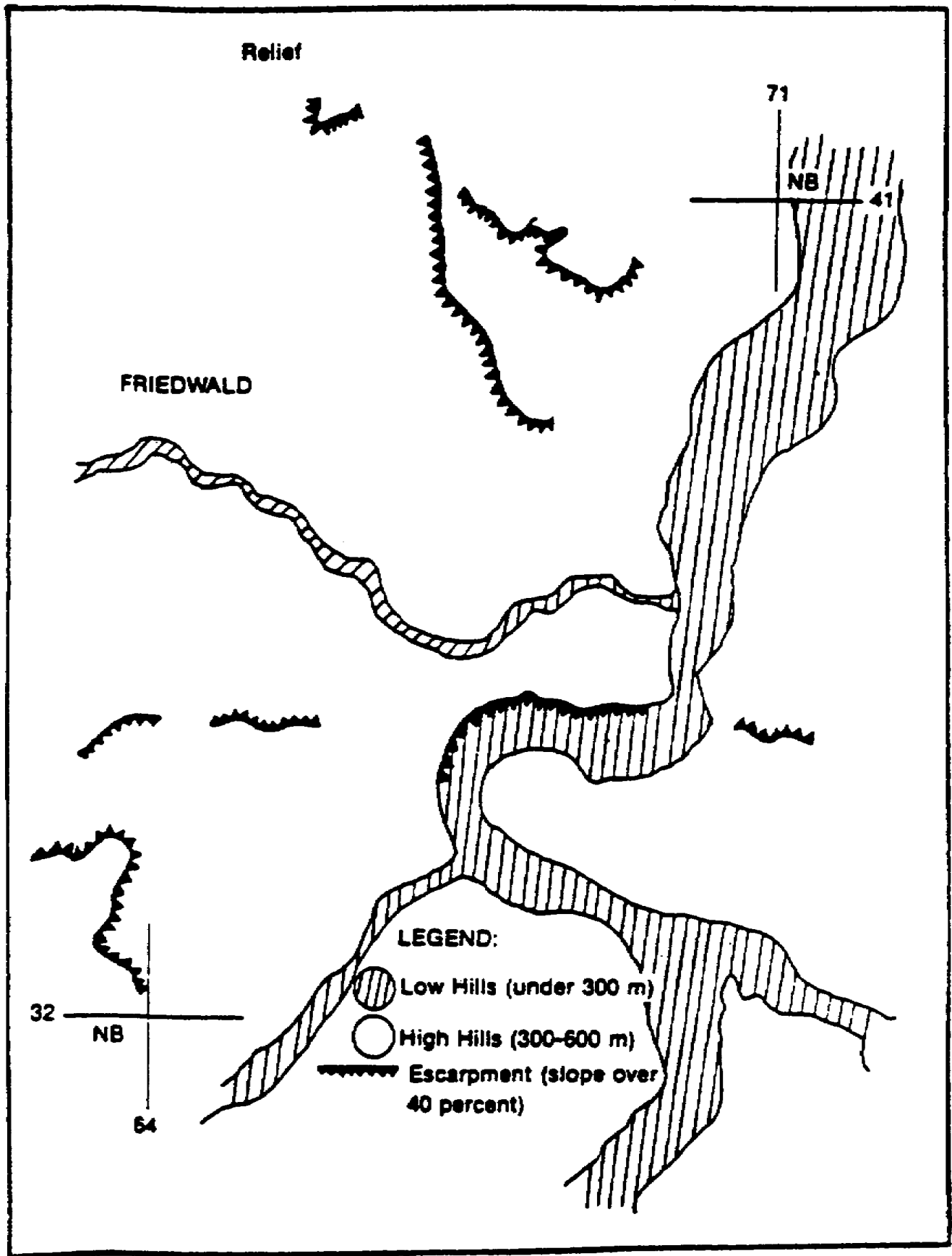


Figure 2-6. Example -relief.

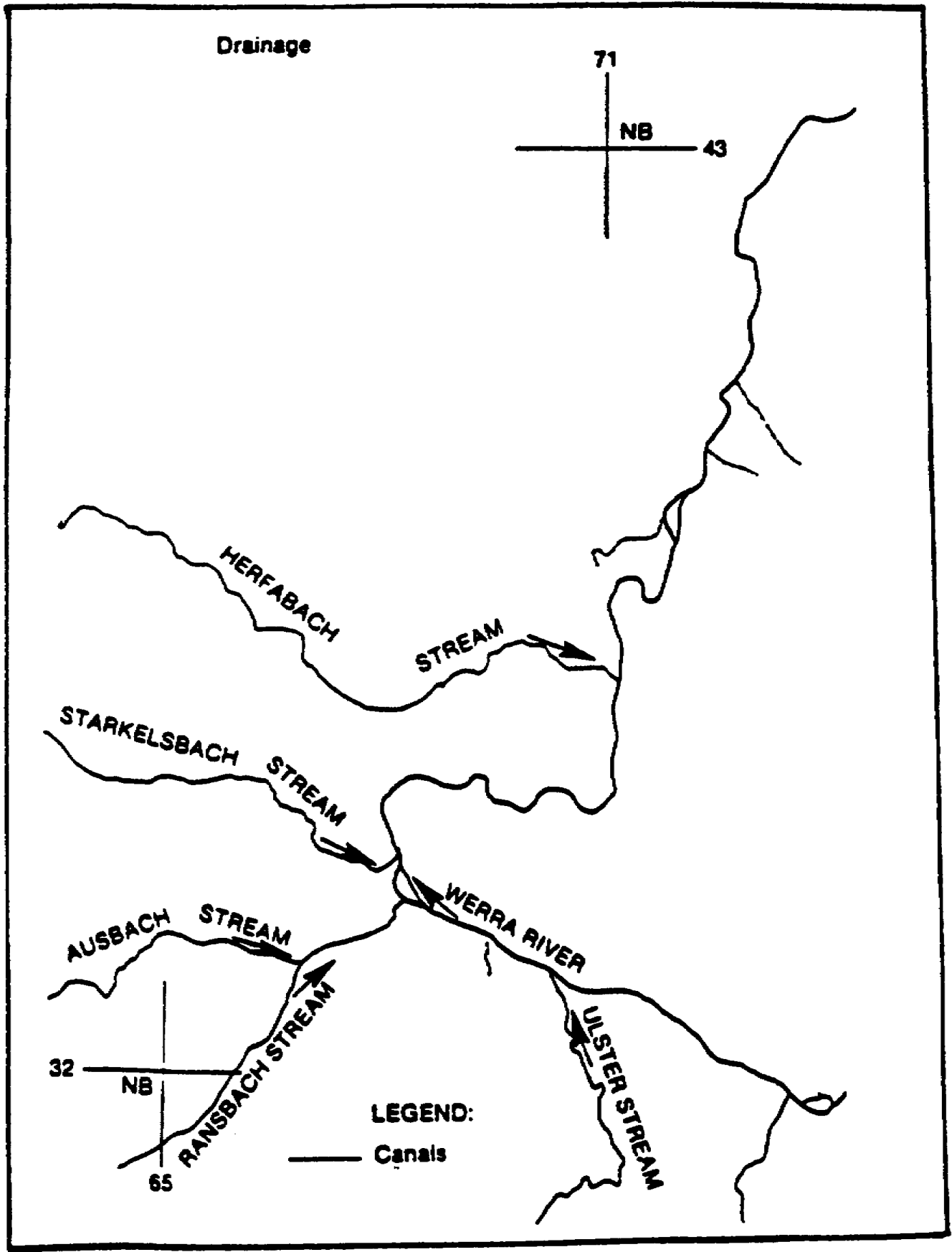


Figure 2-7. Example -drainage.

b. Paragraph 2b(2), describes vegetation. In this paragraph, indicate wooded areas. Vegetation studies are best given in the form of a tinted, or otherwise marked overlay. Again, the engineer section should assist you through its studies of the area. Items included under this section on wooded areas include:

- Locations of trees.
- Diameter of trunks.
- Density of the trees.
- Crown cover (tops of the trees).
- Undergrowth.
- Types of natural and cultivated vegetation of nonwooded area.

NOTE: An example of how vegetation is discussed follows. Notice the discussion and overlays are a continuation of the engineers terrain study (Figures 2-8 and 2-9).

(2) Vegetation.

(a) Forested areas are comprised primarily of mixed coniferous and deciduous trees with a preponderance of coniferous trees in forests at lower elevations. HILL 511 (NB627326) is forested with primarily deciduous trees. All forests contain small clearings, footpaths not more than 2 m wide, and are clear of underbrush.

1 Deciduous forest is composed primarily of beech, broadleaf oak, and hornbeam (birch) trees. The trees are spaced from 2-5 m apart, are 30-80 centimeters (cm) thick, and from 8-20 m tall. A broken canopy is present about 5 m above the ground where the branches and leaves merge. During September the leaves change color; however, the leaves do not fall from the trees until late October. The existing undergrowth consists mostly of grasses not more than .5 m tall.

2 Coniferous forest is composed primarily of pine and spruce trees that grow at lower elevations. The trees are spaced from 1.5-4 m apart, are 15-40 cm thick, and from 10-35 m tall. A dense canopy is present approximately 8-10 m above the ground where the branches of adjacent trees merge. No significant undergrowth is present due to good forest management, and the dense canopy precludes the growth of weeds and small bushes.

3 Meadows/pastures, and crops. Meadows and pastures are used primarily for grazing purposes and consist of grasses not more than .3 m in height. Fences around the pastures are generally constructed of wooden posts and two or three strands of barbed wire. Crops which are grown consist of rye, wheat, and hay. They do not exceed .5 m in height at this time of year.

Figure 2-8. Example -vegetation.

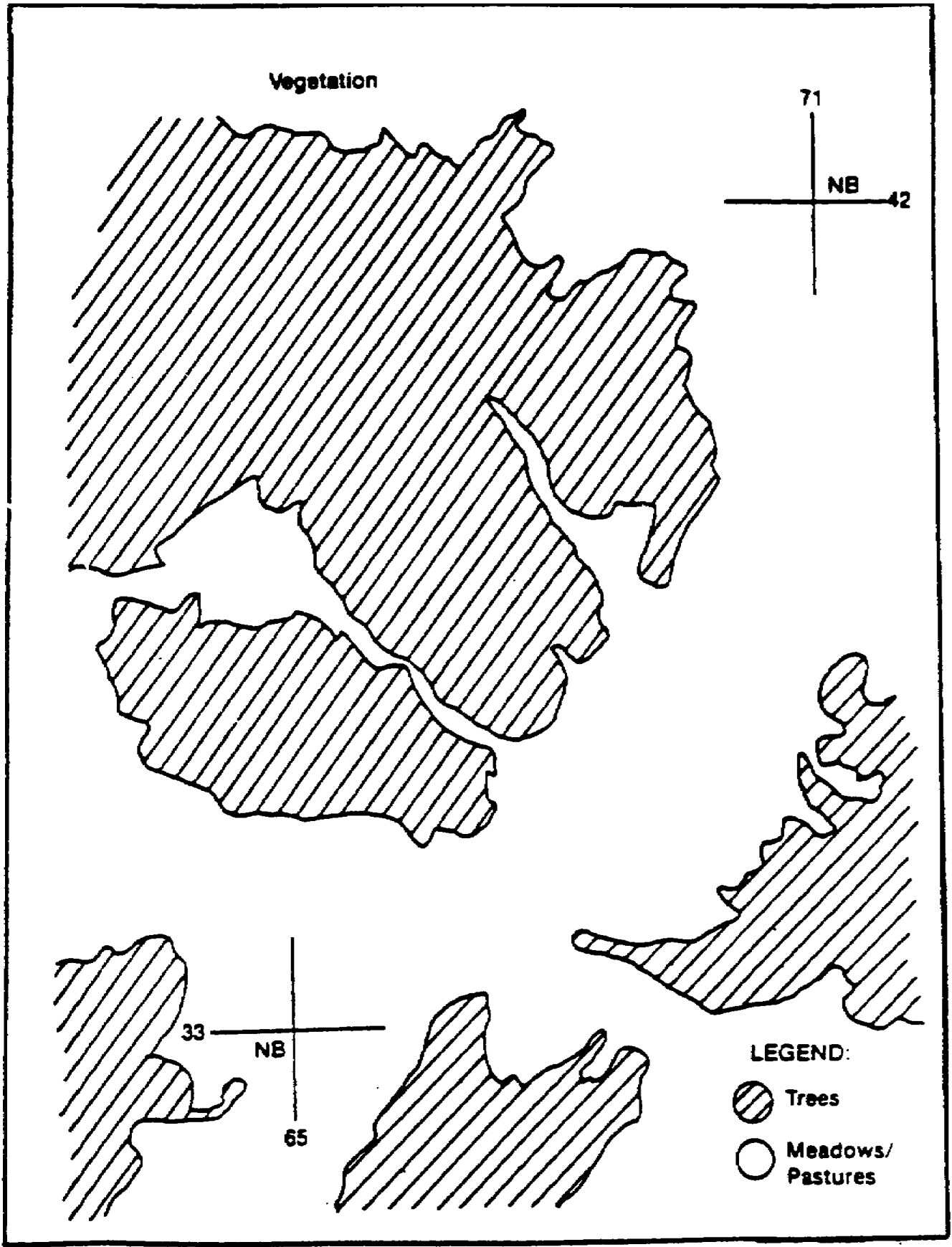


Figure 2-9. Vegetation overlay.

c. Paragraph 2b(3) shows surface materials. The information on surface materials is best presented on a colored or marked overlay. Of concern are the various types of soils and the subsurface and surface rock structures. This information is used to prepare a trafficability map or overlay and a map that depicts areas susceptible to induced nuclear radiation. An example concerning surface materials is shown in Figure 2-10. Included is an overlay that illustrates the various types of soils and the trafficability of the area (Figure 2-11). Again, this is part of the engineer sections terrain study.

(3) Surface materials.

(a) Soils. The higher terrain of this area is covered with sandy soil mixed with clay and silt (annotated CL on overlay). These soils provide good trafficability at all times. The soils of the lower pastures/meadows consist of silt and moderately plastic clays which, during periods of prolonged or heavy precipitation, become unstable and do not provide good trafficability (annotated OH on overlay). The soils along the WERRA river and the ULSTER river consist of inorganic silts and fine sands with slight plasticity which do not allow passage of tracked vehicles at any time. Wheeled vehicles can pass through the area at most times; but, during heavy or prolonged precipitation, trafficability is greatly reduced (annotated ML on the overlay). The area marked PT on the overlay consists of peat and other highly organic soils and is not trafficable by any vehicles except on a road.

(b) Effects on soils. All the soils present in the area are susceptible to induced nuclear radiation.

Figure 2-10. Example of paragraph 2b(2) vegetation.

d. Paragraph 2b(4) shows artificial or manmade features. The military importance of manmade features includes the street-by-street warfare in strongly defended cities, the critical communication of roads and railroads, bridges, and all other elements of manmade landscape which provide obstacles, cover, concealment, or "key terrain."

NOTE: The most important of these features in relation to military operations are settlements and buildings, transportation routes, bridges, airports, tunnels, fortifications, and other features of military significance; includes types of construction.

(4) Artificial features.

(a) Buildings. Most of the buildings in the battlefield area are concentrated in the villages, towns, and cities. The buildings located close to each other are primarily of wood and masonry construction, two stories in height, and have narrow windows with wooden shutters. Most of the buildings have cellars that vary in size and depth. Nearly every village contains a church with a high steeple constructed of stone. The streets in the towns and villages are very narrow and, except for major thoroughfares, will permit only one-way traffic.

(b) Roads. There are two major roads in the battlefield area. Numerous secondary roads, farm roads, and forest trails are also present. Conditions and dimensions of the principal roads are:

1 Highway 62. A hard-surface, east-west road runs from PHILIPPSTHAL (NB708322) to BAD HERSFELD (NB508353) to the west. It is 6-8 m wide and in excellent condition. It has no overpasses or underpasses but does have a Class 40 bridge over the ULSTER river (NB695327).

2 Highway 83. A hard surface, northwest-southeast road that runs through the battlefield area, terminating at WOELFERSHAUSEN (NB691364). It is 6-8 m wide and in excellent condition. It has no tunnels, overpasses, or bridges in the battlefield area.

3 Secondary roads in the area are 4-6 m wide and hard-surface, all-weather routes capable of sustaining military traffic, although maintenance will be necessary. Bridges and overpasses on these roads are Class 40 or higher.

4 All other roads are light surface or dirt roads that measure 2-4 m in width. The roads will sustain military traffic during fair weather only. During periods of heavy or prolonged precipitation, the roads will not sustain military traffic and will in many instances become impassible. Bridges on these roads do not exceed Class 20.

(c) Bridges. All major bridges in the battlefield area are still intact but have been prepared for demolition.

(d) Railroads.

1 A standard-gauge, multiple-track railroad runs through HOENEBACH (NB660430). Numerous overpasses exist along the route.

2 A standard-gauge, single-track railroad runs in the southern portion of the battlefield area. No major bridges or over-passes are found along this track.

Figure 2-11. Example of paragraph 2b(4) -artificial features.

3 A standard-gauge, single-track railroad runs north and south along the western side of the WERRA river with numerous bridges and overpasses. All bridges are Class 60.

4 All railroad bridges, overpasses, and tracks in this area are in excellent condition. Major bridges and selected overpasses have been prepared for demolition.

5 All of these railroads have numerous embankments and cuts with slopes ranging from 60-100%. There are no tunnels on any of the routes.

e. Airports. There are no airports in the battlefield area.

f. Fortifications. Enemy forces have constructed extensive field fortifications and artificial obstacles throughout the area they occupy. The artificial obstacles, primarily minefields, barbed wire entanglements, and antitank dragons teeth and ditches, are most extensive in the RASDORF (NB6868), to the north, DIPPACH (NB733413) to OBERZELLA (NB732326), and UNTERBREIZBACH (NB687301) areas.

Figure 2-12. Example of paragraph 2b(4) -artificial features (concluded).

NOTE: The preceding examples of overlays, plus additional types, are an important input to the intelligence preparation of the battlefield (IPB). IPB is an analytic process which allows maximum integration of effort among the all-source intelligence section (ASIS), engineer section, and air weather service.

4. Paragraph 2c is entitled "Other Characteristics" and the following elements are considered in separate categories. Elements lacking information are not addressed.

- Sociology.
- Economics.
- Psychology.
- Government.
- Religion.
- Science and technology.
- Transportation.
- Manpower.
- Hydrography.

NOTE: Under each of these separate characteristics, you list all available FACTS that pertain to the area under demographic study which may influence friendly and enemy courses of action. These characteristics are particularly important to combat service support (CSS) units. They also influence, to some extent, the decisions of all commanders and become increasingly important as the area of interest of a command increases. The information listed under this paragraph will normally be provided to you by the G5, civil-military officer (Figure 2-13).

(1) Sociology. The area is generally rural. The population density in the area is approximately 250 people per square mile. The major population centers are located in the western half of the area.

(2) Government. Politically, the population is close knit. Every town of 250 and more people has a Burgermeister (Mayor) and town council form of government. The populace is pro-Western and can be expected to aid allied operations.

(3) Economics. Major occupations are farming, wine production, fruit growing, and manufacturing. The populace is prosperous and basically middle class.

(4) Religion. The inhabitants are 71% Roman Catholic, 26% Protestant, and 3% other.

Figure 2-13. Demographic study.

NOTE: Once you have received or developed this information, you should list those characteristics that impact upon the course of action for either force.

LESSON 2

PRACTICE EXERCISE

The following items will test your grasp of the material covered in this lesson. There is only one correct answer for each item. When you have completed the exercise, check your answers with the answer key that follows. If you answer any item incorrectly, study again that part of the lesson which contains the portion involved.

1. What is the last item of the heading in the analysis of the battlefield area?
 - A. DTG.
 - B. Title line.
 - C. Time suffix designator.
 - D. Classification.
2. What is the title of paragraph 1b and what information does it contain?
 - A. Purpose. It contains a statement on the purpose of the analysis of the battlefield area and a description of the area to be analyzed.
 - B. Mission. It contains a statement on the mission of the unit/command and lists any consideration that limit the application of the study.

The following instructions pertain to questions 3-9.

Under each of the following statements, categorize by paragraph and characteristics of a paragraph, where you would place the individual items in the analysis of the battlefield area. For example:

"Bridges on all secondary roads are Class 40 or higher."

ANSWER: Terrain is covered in paragraph 2b and artificial (manmade) features (such as bridges) are characteristics (pages 2-19/2-20, para d (note) /fig 2-12.

3. The mission is to delay in zone and, on order, move to the west bank of the FULDA river and assume defensive positions.

ANSWER: _____

4. The preponderance of the battlefield area is higher terrain which rises from the WERRA river valley to the west to heights of 500-600 m.

ANSWER: _____

5. All soils in the battlefield area are susceptible to induced nuclear radiation.

ANSWER: _____

6. Highway 83 is a hard-surface, northeast-southwest road that runs through the battlefield area ending at WOELFERSHAUSEN (NB691364).

ANSWER: _____

7. Major occupations are farming and fruit growing. Populace is considered middle-class.

ANSWER: _____

8. Light rain beginning at 0230 hours; visibility .5-1 mile; 100% cloud cover; max temp 65°F, min 50°F, humidity 90-100%; atmospheric pressure 30.00 inches (990 millibars).

ANSWER: _____

LESSON 2

PRACTICE EXERCISE

ANSWER KEY AND FEEDBACK

<u>Item</u>	<u>Correct Answer and Feedback</u>
1.	C. The last item of the heading is time suffix designator line (page 2-4, para 10).
2.	B. Paragraph 1 b is entitled "Mission." It contains a statement on the mission of the unit/command and lists any consideration that may limit the application of the study (page 2-5, para 3).
3.	Mission is covered in paragraph 1b (pages 2-5, para 3/fig 2-2).
4.	Terrain is covered in paragraph 2b and relief and drainage are the characteristics of the battlefield area (pages 2-9/2-10, para 3/fig 2-5).
5.	Terrain is covered in paragraph 2b and surface materials are the characteristics (pages 2-9/2-16, paras 3/3c, fig 2-10).
6.	Terrain is covered in paragraph 2b and manmade features are the characteristics (pages 2-16/2-17, paras 3/3d, fig 2-12).
7.	Other characteristics are shown in paragraph 2c (pages 2-18/2-19, para 4/fig 2-13).
8.	Climate and weather conditions shown in paragraph 2a (pages 2-6/2-8, para 2/fig 2-4).

LESSON 3

MILITARY ASPECTS OF THE AREA

CRITICAL TASKS: 301-336-1100
301-372-2050
301-372-3050

OVERVIEW

LESSON DESCRIPTION:

In this lesson you will learn to prepare paragraph 3 (military aspects of the area) of the analysis of the battlefield area.

TERMINAL LEARNING OBJECTIVE:

- TASK:** Prepare paragraph 3 of the analysis of the battlefield area.
- CONDITION:** You will be given access to extracts from FM 34-3, FM 34-130, and FM 101-5.
- STANDARD:** Paragraph 3 of the analysis of the battlefield area will be in accordance with FM 34-3, FM 34-130, FM 101-5.
- REFERENCES:** The material contained in this lesson was derived from the following publications:
- FM 34-3.
 - FM 34-130.
 - FM 101-5.

INTRODUCTION

After completing the heading and paragraphs 1 and 2, you should prepare paragraph 3, military aspects of the area in the analysis of the battlefield area.

PART A: DEFINITIONS AND DESCRIPTION OF PARAGRAPH 3

1. Paragraph 3 of the analysis of the battlefield area is entitled "Military Aspects of the Area." Paragraph 3 is where an analysis of the information contained in paragraph 2 is made. Through the analysis of the facts listed in paragraph 2, you can determine the influence they have on the tactical and combat service support (CSS) factors considered in the selection of a course of action by either force. In the analysis of these factors, the effects of and on nuclear fires, chemical and biological agents, and important devices and equipment used are integrated.
2. Paragraph 3a is entitled "Tactical Aspects." It considers the effect that the area will have on five tactical aspects; observation, and FofFs, concealment and cover, obstacles, key terrain, and avenues of approach, which are the OCOKA factors.

NOTE: Before you begin to develop the necessary information for this paragraph, you should review these OCOKA factors.

a. Paragraph 3a(1) describes observation and FofFs. Observation relates to the influence of terrain on the ability of a force to exercise surveillance over a given area either visually or through the use of surveillance devices, both optical and electronic. Effects of and on nuclear fires, chemical agents, and so forth are included as are any marked effects on surveillance equipment based on LOS and fire delivery means. The total effect of visibility and observation is unmistakable in the ability of a force to see or its vulnerability to be seen. These conditions are analyzed separately because visibility varies with weather, which changes, whereas observation varies with terrain, which is relatively stable. For example, a high hill may provide excellent observation even though visibility is restricted by fog surrounding the hill at a given time.

(1) As used in the analysis of the battlefield area, fire relates to the influence of terrain on the effectiveness of direct-and indirect-fire weapons. The fires on indirect-fire weapons, such as mortars and artillery guns and howitzers, are affected primarily by terrain-conditions within the target area which may influence the effects of the fire delivery means. Observation and fire are of concern to CSS units as they influence rear area security.

(2) FofFs for direct-fire weapons such as machine guns and automatic rifles may be affected by the terrain conditions between the weapon and the target.

(3) The analyst identifies those terrain features within and adjacent to the battlefield area which afford the friendly or enemy forces favorable observation and fire.

REMEMBER: Effects on fire include effects on delivery means, FofFs, and effectiveness on fires.

b. Paragraph 3a (2) shows concealment and cover. It is oriented on protection of friendly and enemy forces and indicates or describes the influence of weather, relief, vegetation, and artificial features. Effects of and on nuclear fires, surveillance devices, chemical and enemy biological agents, and so forth, are included as appropriate. The discussion is oriented not only on protection of our own and enemy forces, but also on other operations to include use of guerrillas, infiltration and counter infiltration, deception, counterintelligence (CD), armor, and artillery. It is also oriented on site requirement for CSS and tactical installations. Include only marked effects that help in selection of friendly and enemy courses of action.

(1) Concealment is protection from observation and may be provided by woods, undergrowth, snowdrifts, tall grass, cultivated vegetation, smoke, fog, ground haze, rain, dust, or any other feature which denies observation.

(2) Cover is defined as protection from the effects of fires and is provided by rocks, ditches, quarries, caves, riverbanks, folds in the ground, shell holes, firing positions, buildings, walls, railroad embankments and cuts, and so on. Areas that provide cover from direct fire weapons may or may not provide cover from indirect-fire weapons. When you evaluate the effects of nuclear weapons, what provides cover from direct- and indirect-fire conventional weapons does not necessarily afford the same protection. For example, unless the forward slopes of a terrain mass are extremely steep, blast will affect personnel and equipment on the

reverse slope because the blast wave will follow the contour of the ground. Additionally, when a nuclear weapon is detonated over a valley or the axis of the valley is pointed toward ground zero, the blast will be canalized and intensify the damage. Irregular terrain does offer some protection from thermal radiation, but few buildings are sufficiently strong to withstand the effects of blast and heat.

(3) Concealment and cover are extremely important in both the attack and the defense. If attacking units can move under the concealment of woods, fog, or a moonless night, the chances of the success of their mission are enhanced. In a defensive situation, forces seek to defend in an area which offers both good concealment and cover, but does not provide covered approaches for the enemy. In the attack, any element of the weather or terrain which offers concealment and cover assists in the mission and may ensure the attack will be more effective.

NOTE: The important point to remember is that cover is solid; therefore, it provides limited protection from weapons fire. Concealment simply keeps the enemy from seeing you.

c. Paragraph 3a(3) on obstacles indicates graphically or describes all natural and artificial obstacles and the influence of relief, weather, vegetation, surface materials, and artificial features. Effects, as appropriate, of and on nuclear fires, chemical and enemy biological agents, and effects on trafficability and accessibility are included. If of significant influence, the effect of each obstacle on possible friendly and enemy courses of action is indicated. Obstacles and trafficability influence site locations for CSS units.

(1) An obstacle is any natural or manmade feature which stops, impedes, or diverts military movement. Show all natural and artificial obstacles. Natural obstacles include:

- Rivers.
- Streams.
- Canals.
- Lakes.
- Swamps.
- Cliffs.
- Steep slopes.
- Dense woods.
- Mountains.
- Deserts.
- Jungles.

(2) Manmade obstacles are works of construction or destruction. They include minefields, craters, antitank ditches, trenches, roadblocks, NBC contaminated areas, extensive rubble, and tree blowdown.

NOTE: To be fully effective, obstacles must be covered by observation and FofFs. In the defense, you must identify those features that stop or impede movement within the battlefield area; in the attack, you consider the obstacles within the units zone of action.

(3) Advantages and disadvantages. An obstacle may be considered an advantage or a disadvantage. An obstacle perpendicular to the direction of attack favors the defender by slowing or canalizing; obstacles parallel to the direction of attack may assist in protecting a flank of the attacking force. However, when the obstacle(s) run parallel to the direction of attack, lines-of-communication (LOCs) may be severely degraded.

d. Paragraph 3a(4) describes key terrain features based on the analysis of observations and fields of fire, concealment and cover, obstacles, and mission. Any locality or area the seizure, retention, or control of which affords a marked advantage of either force is considered. The influence of each key terrain feature listed is discussed briefly. The discussion is oriented toward subsequent development of friendly and enemy courses of action. Key terrain features selected are revised as required by the commander's decision and current situation. Key terrain features may be omitted when the enemy has no capability to secure or control terrain features that will materially affect the accomplishment of the mission.

(1) Key terrain is an important factor in the integration of fire and maneuver, in the generation of combat effectiveness, and in all military support operations. Terrain can usually be described in terms of its military aspects. A key terrain feature is any area whose seizure, retention, or control affords a marked advantage to either controlling forces.

(2) Selection. Key terrain features must be considered when formulating courses of action; their selection is based on the mission of the unit, the command level, and the type of unit. Terrain which stops, impedes, or denies military movement may be a key terrain feature. Tactical use of terrain often is directed at increasing the capability for applying combat effectiveness and at the same time forcing the enemy into areas which reduce his capability. Terrain which permits this may also be key terrain. The effect of terrain on fire and maneuver, application of combat effectiveness, and preservation of force integrity are considerations in selecting key terrain. A terrain feature may afford a marked advantage in one case, but little or no advantage under other conditions.

(3) Command level selection. As an example of command level selection of key terrain, a commander at EAC may consider the seizure and control of a given city would afford control of a vital link in the LOC, so the city might be rightly called key terrain. On the other hand, an infantry brigade commander within the EACs area of operations would probably consider the high ground which dominates the city to be of greater importance and the city itself to be an obstacle; therefore, the city is not key terrain.

(4) Tactical units. The structure of friendly and enemy units also influences the selection of key terrain. The types of terrain features usually selected as key terrain for tactical units include:

- High ground which affords favorable observation and FofFs.
- Bridges over unfordable rivers.
- Assigned or assumed objectives.
- Dominant terrain within a defensive sector.

(5) Key terrain or obstacles. Although obstacles are rarely selected as key terrain, the same terrain feature may properly be considered as key terrain at one command level and as an obstacle at another. An example might be in the classification of an unfordable river. At the tactical unit level, in normal terrain, the river is classified as an obstacle because of its primary effect of stopping or impeding military movement; the adjacent high ground is the key terrain because its seizure and control permits full use of the river as an obstacle, and this condition constitutes the tactical advantage. At the EAC level, however, the commander might consider the river as key terrain because of its importance to the supply system. Thus an important fact emerges—the same commander does not consider the river as both key terrain and an obstacle. An exception occurs when an obstacle is assigned as an objective to a force; the obstacle then becomes key terrain to the force ordered to capture it. Lets look briefly at how the mission of a unit affects the selection of key terrain.

(a) In the attack. In the friendly attack, key terrain features usually are forward of friendly positions and frequently assigned as objectives. However, terrain features in adjacent areas may be key terrain if their control facilitates the conduct of the attack or the accomplishment of the mission. Terrain in an adjacent area which enables effective observation and fire of the enemy along an avenue of approach for friendly forces may be key terrain. Key terrain may be within friendly territory when its control is essential to the success of an operation. For example, if the enemy can control a terrain feature which prevents or hinders the attack, the seizure of that feature is essential because it affords us a marked advantage and thus is key terrain.

(b) In the defense. In the friendly defense, key terrain is usually located within the assigned sector and within or behind the selected defensive area. Some examples of key terrain are—

- Terrain which gives good observation over avenues of approach into the defensive position.
- Terrain which permits the defender to cover an obstacle by fire.
- Important communication centers which affect command communications and the use of reserves.

NOTE: Key terrain may also be forward of the defensive area or in adjacent areas. For example, a terrain feature in the forward edge of the battle area (FEBA) or in an adjacent sector, which gives the enemy good observation over defended localities, communication routes, or avenues of approach, is key terrain when active measures must be taken to reduce the enemy advantage. The defender may move his position

forward to include the feature or take actions to minimize the enemy's advantage by the use of fire, chemical, smoke, and concealment and cover.

e. Paragraph 3a(5) describes the avenues of approach (AAs) and mobility corridors (MCs) that are developed from all the previous analysis of the tactical aspects. Such development does not consider the disposition of the enemy forces. An AA must afford some facility of movement and room for adequate dispersion for a force large enough to have significant effect on the outcome of the operation. When either opposing force has available an adequate number of aircraft that can be used to deploy troops and equipment forward to the battle area and significantly affect the accomplishment of the mission, air avenues of approach (AAAs) are listed. If terrain and weather conditions do not significantly influence choice of flight paths, then AAAs are not listed. Enemy AAs are listed first, followed by a list of AAs into the enemy battle area. When the opposing forces are not in contact, or when security forces are in contact, AAs to the battle area for both forces are listed. Each listing of an AA is accomplished by a brief discussion to provide a basis for subsequent development of possible courses of action by either force. For CSS units, the discussion of AAs is based on rear area security requirements.

(1) AAs and MCs are routes by which a force may reach key terrain or an objective. AAs and MCs address maneuver support potential, degree of canalization, concealment and cover, observation and FofFs, obstacles, and the access to key terrain and adjacent avenues or corridors. To be considered an AA, a route must provide some ease of movement and sufficient width for the deployment of the size force for which it is being considered.

REMEMBER: When determining AAs and MCs the analyst uses the one-up, two-down formula. (See page 1-3, para 3).

(2) The analysis of an AA is based on all previous analysis of tactical aspects to include:

(a) Observation and FofFs. This consideration should be favorable for the force moving on the AA.

(b) Concealment and cover. This consideration is often in conflict with observation and FofFs.

(c) Obstacles. Avoiding those perpendicular to the direction of advance and, whenever practical, taking advantage of those parallel to the direction of advance.

(d) Utilization of key terrain.

(e) Adequate maneuver space. This is based, in part, on evaluation of deployment patterns, mobility means, and sufficient space to avoid presenting advantageous targets for nuclear fires.

(f) Ease of movement. This includes relative length of the AA, directness of approach to the objective, soil trafficability, steepness of slopes, obstacles, direction of terrain compartments with respect to direction of movement, and other aspects of the terrain which enhance or restrict command and control.

REMEMBER: The analysis of an AA is primarily based on terrain considerations. Do not consider the disposition of enemy forces. When either force has an adequate number of aircraft available to deploy troops and equipment, air AA may be listed.

(3) In the attack, AAs leading from the line of departure (LD) to key terrain within the objective area are selected for analysis. The most favorable to the friendly forces is identified.

(4) In the defense, AAs starting forward of the defensive position and leading to key terrain within the battle area are selected for analysis and the most favorable to the enemy forces is identified. AAs available to the enemy are described as ending within that key terrain in the battle area which, if seized by the attacker, could result in a marked disadvantage to the defender. Such an AA begins a reasonable distance in front of the friendly forces for whom the analysis is being made. This distance is usually equal to the forward extent of the defense sector.

(5) There are three types of AAs: ground, air, and rear area AAs (Figure 3-1).

(a) Ground avenues of approach. A ground AA is broad enough and contains sufficient MCs to support rapid movement and maneuver of forces along its entire course. It should be free of obstacles. If obstacles are present they should be few in number and require reasonable engineer support to remove them. The avenue also affords good to excellent concealment and cover.

(b) Air avenues of approach (AAA). An AAA is much the same as a ground AA. They are routes that provide a suitable flight path for a specified number of aircraft to reach a drop or landing zone. They should be free of obstacles or obstructions and the flight path must afford some ease of movement for a force of sufficient size to produce a significant effect on the operation. It is important to consider AAAs or MCs in layers as to reflect different altitudes of approach, depending on the level and size of the operation. Furthermore there must be adequate air space for rapid movement of the aircraft to landing or drop zones, the desirability of having multiple flight routes available, and easily recognized terrain features since navigation at low altitudes is extremely difficult.

NOTE: To minimize the exposure of aircraft en route to the objective area, the shortest flight paths that afford sufficient air space, concealment from ground observation, and easily recognized terrain are preferred.

(c) Rear area avenues of approach. These are avenues that provide the rapid movement of rear threat elements and the additional service support elements to the front lines.

NOTE: It is extremely important to indicate the width of the avenues and corridors and what size element can pass through. Note any major choke points that canalize movement along the AA into designated MCs as key terrain.

NOTE: When you prepare the AAs for inclusion in paragraph 3 of the analysis, you should list the enemy's AAs first, followed by a list of the friendly avenues into the enemy's positions, if necessary. This list of friendly AAs may be included, even if the mission is to defend, because friendly forces may take limited objective action during the defense.

interfere with enemy preparations for an attack, or attacks may be launched to relieve and extricate heavily engaged security forces.

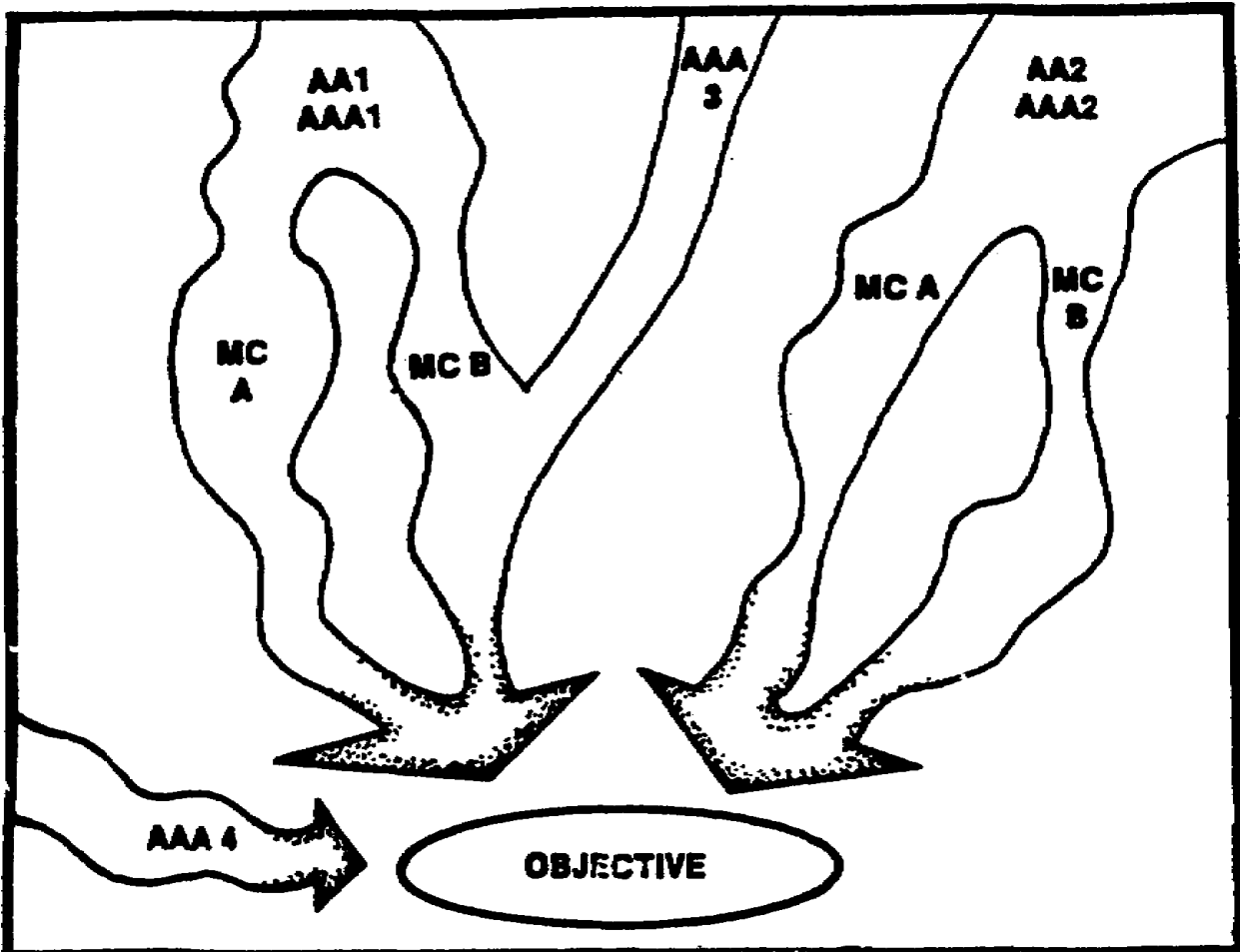


Figure 3-1. Avenues of approach.

f. Other tactical aspects considerations.

(1) MCs. An MC is an area bounded on two opposite sides by terrain features which limit ground observation and direct-fire into the area. These limiting features are usually ridges or high ground, but may also be woods, cities, towns, or wide bodies of water. An MC can take several forms: It may be a street lined with buildings, a meadow bordered by forests, a plain with a mountain range along one side and a body of water opposite, a valley bordered by ridges, or a similar combination of terrain features.

(2) Limiting features. The terrain features which bound an MC are termed "limiting features." An MC includes not only the enclosed area, but also the limiting features. As illustrated in Figure 3-2, you see two MCs formed by three types of limiting features: wooded areas to the north and east, built-up areas throughout, and ridges to the northwest and west. The distance within these features will depend upon the density of the woods and built-up areas.

NOTE: To facilitate analyzing an area, the terrain may be divided into separate areas called compartments which are formed by relief and drainage, vegetation, manmade features, or a combination of all three (Figure 3-2).

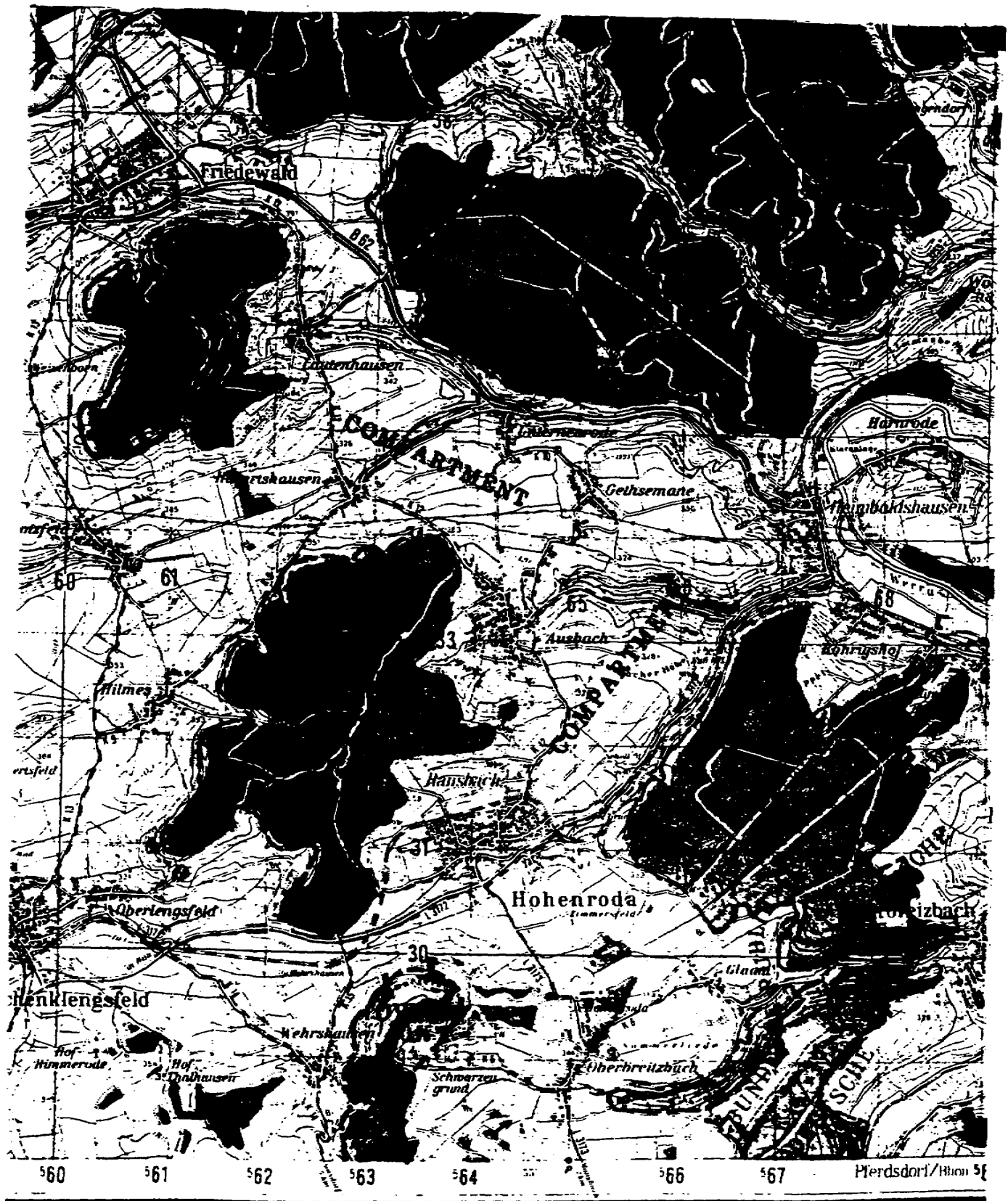


Figure 3-2. Compartments.

(3) Classification. MCs are classified as corridors or cross-compartments. A corridor or cross-compartment is determined by the direction of advance of a military force. A compartment whose long axis is perpendicular or oblique to the direction of advance of a military force is called a "cross-compartment." A compartment whose long axis is parallel to the direction of advance of a military force is called a "corridor."

NOTE: Figure 3-3 is an illustration that portrays these two types of compartments. Arrow AA1 represents a military force advancing from the east. The compartment, in this instance, is considered to be a cross-compartment. Arrow AA2 represents a military force advancing to the southwest and the compartment is considered to be a corridor.

(a) Cross-compartments. In considering the significant tactical aspects in classifying MCs, you will find that cross-compartments in general favor the defense and are not considered as favorable MCs. Cross-compartments offer the most favorable terrain characteristics for defending units to obtain maximum observation and fields of fire from their positions. This is because they increase their ability to gain mutual support between units, laterally and in-depth, and enhance their ability to mass all their fires on the point most threatened by the attacker.

(b) Corridors. Corridors present more variable avenues of approach for the attacker. In this case the defender's lateral organization of observation and fields of fire of flat-trajectory weapons are usually obstructed by the limiting features of the compartment. This decreases the ability of the defender to obtain mutual support between units along the main line of resistance and the units organized to the rear.

NOTE: The terrain considerations just described are not the only one which merit attention. Although corridors and ridges may provide favorable routes of advance for a military force, their effect may be nullified by a lack of trafficability or other terrain considerations.

g. Techniques. Some of the basic techniques which aid in the analysis of terrain deal with methods of marking maps, overlays, and photographs to emphasize terrain characteristics. When properly used, any of the following methods or a combination of these methods can better enable you to "read" terrain:

(1) Hill topping— a method used to accentuate the high ground of an area. It is accomplished by selecting a critical elevation and then coloring or shading all areas higher than that elevation. This method shows the height, general configuration, and location of the high ground.

(2) Layer-tinting— the coloring or shading of successive elevations of the ground, from lowest to highest. By selecting a series of colors and following the contour lines of the map, a realistic three-dimensional effect is created.

(3) Contour emphasizing— identifies the primary contour lines most suitable for illustration of the configuration of the terrain. This vividly shows the general shape of the ground and the relationships between successive elevations on a map.

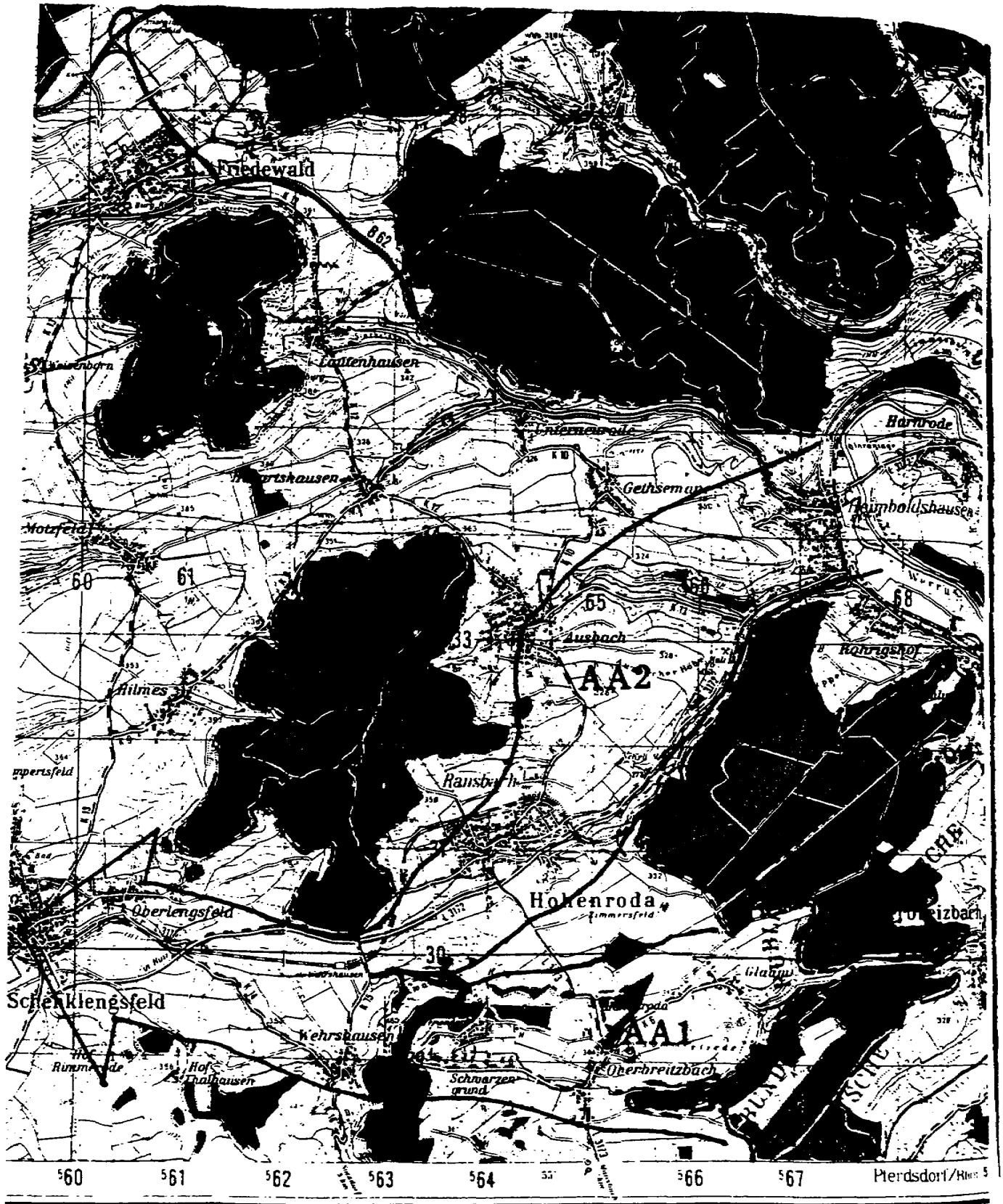


Figure 3-3. Cross-compartments and corridors.

(4) Ridge and stream lining— emphasizes the relief and drainage of an area by drawing over the ridge lines and then emphasizes the drainage system by tracing the course it takes. This method shows you the compartmentation of the area but does not indicate relative elevations or slope. Ridge lining can be used by itself to emphasize the ground compartmentation of an area.

(5) Profiling— the determination of observation and flat-trajectory fields of fire that exist between two points. Terrain features may mask the line-of-sight between these points. By using this method, you can determine if clearance is or is not present.

3. Paragraph 3b is entitled "Combat Service Support (CSS) Aspects" and where you analyze the facts listed in paragraph 2 and the subconclusions developed under the tactical aspects just presented. The analysis of the facts and subconclusions are used as a basis for further studies of the effects of CSS activities on friendly and enemy units. Indicate the impacts of the military aspects of the area on CSS that influence the selection of a course of action by either force in this paragraph. Omit any activity that is not significantly influenced. Considering the major activities listed below, isolate those facts and subconclusions that significantly influence choices of possible courses of action by either friendly or enemy forces or that require special activities to ensure combat effectiveness and adequate support.

a. Paragraph 3b(1) is of particular importance when, weather and terrain conditions are severe; when the battlefield area has a significant population, to include potential labor forces; or when political and economic conditions are unsettled.

b. Paragraph 3b(2) addresses logistics. It is of particular importance when weather and terrain conditions are severe, when the battlefield area imposes additional logistic requirements or has significant resources of military value, or when political and economic conditions are unstable. Detailed coverage is required for those commands whose mission is the logistical support of other units.

c. Paragraph 3b(3) discusses civil-military operations (CMOs). CMO are of particular importance in cold war, limited war, occupation operations, and when extensive civil affairs responsibilities have been assigned to the command. It is particularly important to tactical units when the number of civilians in the area present control problems and restrict use of fire power. Coverage is detailed for those commands with extensive civil affairs responsibilities.

PART B: APPLICATION OF PARAGRAPH 3

1. Paragraph 3. Following is a description of paragraph 3a, Terrain Aspects. You will learn which and how each of the four topics discussed under Terrain of paragraph 2 are used to develop the analysis of OCOKA.

a. Observation and fire. Indicate graphically and/or describe the influence of weather, relief and drainage, vegetation, surface materials, manmade features given under "Terrain" of paragraph 2, and any other pertinent characteristics. Include any marked effects on surveillance devices, equipment based on line-of-sight, and direct delivery means. Effects on fire include the effects on delivery means, FofFs, and the effectiveness of fires. Observation and FofFs are of concern to CSS units because they influence rear area protection considerations.

b. Concealment and cover. Indicate graphically and/or describe the influence of weather, relief and drainage, vegetation, and manmade features. Include effects, of and on, nuclear fires, surveillance devices, and chemical and biological agents. The analysis is oriented on protection of both friendly and enemy forces and on the effects on other operations to include use of guerrilla or irregular forces, tactical cover and deception, counterintelligence, armor, and artillery. This discussion is also oriented to on-site requirements for combat service support and tactical installations.

c. Obstacles. Indicate graphically and/or describe all natural and manmade obstacles and what influence weather, relief and drainage, vegetation, surface materials, and manmade features have on them. Include the effects, of and on, nuclear fires, chemical and biological agents, and trafficability and accessibility. If of significant importance, indicate the effect of each obstacle on possible friendly and enemy courses of action. Obstacles and trafficability influence site locations for combat service support units.

d. Key terrain. Based on the analysis of observation and FofFs, concealment and cover, obstacles, and the mission, select the key terrain features. You should consider any area or locality the seizure, retention, or control of which affords a marked advantage to either force. Discuss, in turn, the influence of each key terrain feature listed. The discussion is pointed toward subsequent development of friendly and enemy courses of action. You must revise this part of the subparagraph as required by the commander's decision and current situation. This discussion may be omitted when the enemy has no capability to secure or control terrain features that will seriously affect the accomplishment of the mission.

e. Avenues of approach. Based on all the previous analyses of the tactical aspects, you develop possible AAs. The development of AAs does not consider the dispositions of enemy forces. An AA must afford some ease of movement and sufficient width for adequate dispersion for a force large enough to have a significant impact or effect on the outcome of the operation. When either friendly or enemy forces have an adequate number of aircraft available which can be used to deploy troops and equipment forward of the battlefield area, and can significantly affect the accomplishment of the mission, AAAs should be listed. If weather and terrain conditions do not have a significant impact, choice of flight paths and AAAs are not listed. Enemy AAs are listed first followed by a list of friendly axes of advance into the enemy's battle area. When the friendly and enemy forces are in contact, AAs for both forces are listed. Every listing of an AA is accompanied by a brief discussion to provide a basis for further development of possible courses of action by either force. For CSS units, the discussion of AAs is based on rear area protection needs.

2. Paragraph 3b. In this paragraph you analyze the effects of weather, terrain, and other characteristics of the area given in paragraph 2, as well as the subconclusions you developed under the tactical aspects just described. You isolate those facts and subconclusions which significantly influence choices of possible courses of action by either the friendly or enemy force, or those that required special activities to ensure combat effectiveness and adequate support. You omit any activity not significantly influenced from the three topics listed below:

- Personnel.
- Logistics.

- CMO requirements.

NOTE: Following is the format that illustrates paragraph 3 and the topics from paragraph 2 discussed under each one (Figure 3-3).

3. MILITARY ASPECTS OF THE AREA.

a. Tactical Aspects.

(1) Observation and FofFs.

(a) Weather conditions.

(b) Relief.

(c) Vegetation.

(d) Artificial features.

(2) Concealment and cover.

(a) Weather conditions.

(b) Relief.

(c) Vegetation.

(d) Artificial features.

(3) Obstacles.

(a) Relief.

(b) Vegetation.

(c) Surface materials.

(d) Artificial features.

(4) Key terrain features.

(a) Observation and FofFs.

(b) Concealment and cover.

Figure 3-4. Example format-paragraph 3.

- (c) Obstacles.
- (d) Unit mission.
- (5) Avenues of approach.
 - (a) Available to enemy into our position.
 - (b) Available to us into the enemy's position.
- b. Combat Service Support Aspects.
 - (1) Personnel.
 - (2) Logistics.
 - (3) CMO requirements are based on:
 - (a) Weather.
 - (b) Terrain.
 - (c) Additional characteristics.
 - (d) Subconclusions developed in 3a above.

Figure 3-4. Example format-paragraph 3 (concluded).

3. Application. The following examples show how to prepare different topics of paragraph 3 using the data given in paragraph 2a(2):

a. Weather forecast. Following is a weather forecast for a battlefield area. Using this data, let's prepare the necessary comments for observation and FofFs and concealment and cover (Figure 3-5).

(2) Weather forecast, 310001Z Aug 19 __ to 042400Z Sep 19 __.

(a) Precipitation. Light rain with periods of moderate to heavy rain beginning early 01 Sep and ending late 02 Sep.

(b) Fog. Dense fog forming in early morning hours in low areas. Will burn off by 0730 hours but may persist longer during periods of precipitation.

(c) Temperature. Lows at night approximately 45° F with daytime temperatures ranging from 58-70° F.

(d) Cloudiness. Clear until 312000Z Aug with clouds forming gradually thereafter. Estimated 80-100% cloud cover from 010300Z Sep to 021900Z Sep. Ceiling will vary from 700-1500 ft above ground level during this period. Clear skies from 030400Z Sep during the rest of the reporting period. Ceilings unlimited.

(e) Visibility. 10-14 km. During fog, visibility will be reduced to 100-500 m. Visibility during precipitation will vary from 1-2 km.

(f) Atmospheric pressure. Average about 30 inches (990 millibars).

(g) Wind. Surface winds from the south-southeast at 7-9 knots. Winds aloft for nuclear yields of tactical interest about 15 knots from the southwest.

(h) Light data:

DATE	BMNT	BMCT	EECT	EENT	MOONRISE	MOONSET
31 Aug	0447	0507	1847	1907	2035	0956
01 Sep	0448	0528	1845	1905	2107	1101
02 Sep	0450	0510	1842	1902	2142	1203
03 Sep	0452	0531	1839	1858	2204	1300
04 Sep	0455	0557	1835	1823	2259	1359

Figure 3-5. Weather forecast.

b. The following example shows how the weather forecast is used in subparagraph 3a (Figure 3-6).

3. MILITARY ASPECTS OF THE AREA.

a. Tactical Aspects.

(1) Observation and FofFs.

(a) Weather conditions. Ground fog will reduce visibility to 100-500 m from early morning until about 0730 daily, especially in low lying areas. Visibility during light to moderate precipitation will be from 700-1500 m which will severely restrict aerial observation. At all other times, good ground and air observation should exist. Winds aloft favor the friendly use of nuclear weapons while surface winds favor enemy use of chemical and biological weapons.

(2) Concealment and cover.

(a) Weather. Early morning ground fog offers concealment from visual observation. Low ceilings will drastically reduce the effectiveness of aerial support.

Figure 3-6. Use of weather report for paragraph 3a.

NOTE: Only those aspects that have an impact on observation and concealment and cover are presented. The ground fog and reduced visibility are critical factors in this area. The statements concerning nuclear weapons favoring friendly forces is due to the fact the upper winds from the southwest will cause the radioactive cloud to be blown over enemy areas while the surface winds are blowing toward friendly areas, which favor the enemy's use of chemical and/or biological agents.

c. On the following pages is an extract of a completed paragraph 2 of the analysis of the battlefield area. Note a mission statement from paragraph 1 is also provided. The weather information will be the same as just presented (Figure 3-7).

MISSION: To delay in zone, and on order, move west to the west bank of the FULDA river. Assume positions on the west bank of the FULDA river.

2. a. Climate or Weather Conditions (previously described).

b. Terrain.

(1) Relief and drainage systems.

(a) Relief. Relief in the battlefield area is divided into three general elevations with higher terrain running north to south throughout the center of the area (FRIEDEWALD) and with river valleys at both the east and west.

1 WERRA river valley. This valley runs generally north and south. Elevation in this area is between 150 and 300 m and rises to both the east and west.

2 FRIEDEWALD. The preponderance of the battlefield area is higher terrain which rises from the WERRA river valley to heights of 500-600 m. Major features in the FRIEDEWALD are a northeast-southwest ridge line in the central to northeast portion of the area and individual hill masses in the central and southern regions. Slopes associated with the hill masses and ridge lines exceed 40 percent in some areas.

3 FULDA river valley. Elevations in this area fall away from south to north and rise from the valley to the east and west. Elevations are similar to those found in the WERRA river valley. The terrain rises rapidly to the west to the 400-500 m level.

(b) Drainage. Drainage in the battlefield area is generally good, and the drainage system is capable of quickly draining light to moderate precipitation. The battlefield area is drained to both the east and west by numerous small intermittent streams which empty into the FULDA river in the west and the WERRA river in the east. Numerous agricultural irrigation canals carry water to the farmlands in the countryside.

1 FULDA river. The FULDA river is approximately 6-45 m wide and 1-3 m deep. Current normally is relatively slow with a speed of 3-5 kmh. After 1-1.5 hours of heavy rain, depth may increase to 3-5 m and speed may increase to 6-10 kmh. The riverbed is capable of supporting both wheeled and tracked vehicles during crossing and, in most areas, riverbeds and banks are favorable for fording.

2 WERRA river. The WERRA river is approximately 20-40 m wide and from 1.2-2.5 m deep. The current speed is normally 2-4 kmh. Heavy rains may increase the speed to 3-6 kmh and the depth to 2-4 m. The riverbeds and banks are capable of supporting wheeled vehicles only.

3 Numerous other small streams flow throughout the area but all are less than 4 m wide and 1 m deep. These streams will not impede movement through the area.

Figure 3-7. Paragraph 2.

(2) Vegetation.

(a) Forested areas are comprised primarily of mixed coniferous and deciduous trees with a preponderance of coniferous trees in forests at lower elevations. HILL 511 (NB627326) and HILL 524 (NB611363) are forested primarily with deciduous trees. All forests contain small clearings, trails not more than 2.5 m wide and frequent firebreaks that are usually 3-5 m wide and cleared of under brush.

1 Deciduous forest. Composed primarily of broadleaf oak, beech, and hornbeam (birch) trees. The trees are spaced from 1.5-3 m apart, are 30-88 cm thick, and 15-20 m tall. A broken canopy is about 5 m above the ground where leaves and branches intertwine. During September the leaves change color, but they do not fall from the trees until October. Undergrowth consists primarily of grasses not more than .5 m tall except on steep slopes.

2 Coniferous forest. Composed primarily of pine and spruce trees that grow at the lower elevations. The trees are spaced from 1-3 m apart and are 15-40 cm thick and 15-35 m tall. A dense canopy is present approximately 10 m above the ground where the branches of adjacent trees intertwine. No significant underbrush exists because of excellent forestry management programs and periodic logging operation have been carried out. The dense canopy also precludes the growth of weeds and small bushes.

3 Orchards. In the apple orchards the trees are planted in well kept rows; vineyards are planted with 1 m between rows and .5 m between plants within the rows. Each vine grows entwined around a wooden stake, is carefully pruned, and does not exceed 1 m in height. There is no underbrush and the soil remains soft as a result of frequent watering. The vineyards are separated into sections by a series of access roads, not exceeding 2 m in width, surfaced with asphalt. Grapes are harvested from late September to early December.

(b) Meadows and pastureland. The crops which are grown in alternating strips of rye, wheat, and hay, do not exceed .5 m in height at this time of the year. Pastureland and meadows are used for grazing purposes and consist of grasses not more than .3 m in height. There are no fences surrounding the cropland and meadows. Fences surrounding the pasturelands are generally made of wooden posts and two or three strand of barbed wire.

(3) Surface materials. The high ridges of this area are covered with sandy soil mixed with clay or silt. These soils provide good trafficability at all times. The soil of the lower areas consists of silt and moderately plastic clays which, during periods of prolonged or heavy rains, become unstable and do not provide good trafficability.

(4) Artificial features.

Figure 3-7. Paragraph 2 (continued).

(a) Buildings. Most of the buildings in the battlefield area are concentrated in the villages, towns, and cities. The buildings located close to each other are primarily of wood and masonry construction, two stories in height, and have narrow windows with wooden shutters. Most of the buildings have cellars that vary in size and depth. Nearly every village contains a church constructed of stone with a high steeple. The streets in the towns and villages are very narrow and, except for major thoroughfares, will permit only one-way traffic.

(b) Roads. There are three major east-west roads in the battlefield area. Numerous secondary roads, farm roads, and forest trails are also present. Conditions and dimensions of the principal roads are as follows:

1 EISENACH AUTOBAHN. A northeast—southwest autobahn is located in the battlefield area center. Each directional route is 2 lanes (10 m) wide. The directional routes are separated by a strip of vegetation 8-20 m wide. The surface is of bituminous asphalt. The shoulders are made of bituminous gravel, 2.5 m wide, and in good condition. The AUTOBAHN is in excellent condition and capable of carrying heavy military traffic for extended periods. Destroyed culverts can be easily bypassed. Numerous overpasses and underpasses exist along the route; all are concrete and have a minimum clearance of 4.5 m. All the overpasses over other roads carry a classification of 40 or higher. A major (class 80) bridge is located at the HAUNE river (NB507339); it is constructed of reinforced concrete. Bypasses are available adjacent to all bridges and overpasses located on this route. There are numerous cuts and embankments along the AUTOBAHN with slopes varying from 75-100%.

2 Highway 62. A hard-surface, east-west road which intersects with the EISENACH AUTOBAHN at NB 553353 and runs from PHILIPPSTHAL (NB708322) to BAD HERSFELD (NB503350). It is 6-8 m wide and in excellent condition. It has no overpasses or underpasses on the route but does have one Class 60 concrete bridge over the FULDA river and a Class 40 bridge over the ULSTER river (NB695327).

3 Secondary roads in the area are 4-6 m wide and hard-surface, all-weather routes capable of sustaining military traffic, although maintenance will be necessary. Many of these roads are tree-lined; bridges and overpasses on them are Class 40 or higher.

4 All other roads in the area are light surface or dirt roads that measure 2-4 m in width. The roads will sustain military traffic during good weather; however, during periods of prolonged or heavy precipitation, it is doubtful they can sustain military traffic. Most of these roads will, in all likelihood, become impassable. Bridges on these roads do not exceed Class 20.

(c) Bridges. All major bridges are still intact but have been prepared for demolition.

(d) Railroads.

1 A standard-gauge, multiple-track railroad runs north to south along the FULDA river. Numerous overpasses exist along the route. The only major bridge on this route is at NB548433 and is Class 100 bridge.

Figure 3-7. Paragraph 2 (continued).

2 A standard-gauge, single-track spur runs roughly parallel to the 2nd brigade northern boundary. Numerous overpasses exist along the route.

3 A standard-gauge, single-track railroad runs north to south along the WERRA river with numerous bridges and overpasses. All bridges are class 60.

4 A standard-gauge, single-track railroad runs in the southern portion of the battlefield area. No major bridges or overpasses are found along this route.

5 All railroad bridges, overpasses, and tracks in this area are in excellent condition. Major bridges and selected overpasses have been prepared for demolition.

6 All the above railroads have numerous embankments and cuts with slopes ranging from 75-100%. There are no tunnels on any of the routes.

(e) Airports. No information available.

c. Other characteristics.

(1) **Sociology.** The area is generally rural. The population density in the area is approximately 250 people per square mile. The major population centers are located in the western half of the area.

(2) **Government.** Politically the population is close-knit. Every town of 250 and more people has a Burgermeister (Mayor) and town council form of government. The populace is pro-Western and can be expected to aid allied operations.

(3) **Economics.** Major occupations are farming, wine production, fruit growing, and manufacturing. The populace is prosperous and basically middle-class.

(4) **Religion.** The inhabitants are 71% Roman Catholic, 26% protestant, and 3% other.

Figure 3-7. Paragraph 2 (continued).

4. Preparation of paragraph 3a. The following example (Figure 3-7) shows how to prepare paragraph 3a, "Tactical Aspects" from information presented in paragraph 2 (Figure 3-8).

3. MILITARY ASPECTS OF THE AREA.

a. Tactical Aspects.

(1) Observation and FofFs.

(a) Weather conditions (as previously discussed).

(b) Relief. Good FofFs and ground observation in both river valleys. Observation and FofFs within the higher elevations will be constricted by irregular terrain. High terrain to the immediate east and west of the river valleys offers good observation into both valleys.

(c) Vegetation. In all the types of forests present in the area, ground observation and FofFs will be restricted primarily to trails, clearings, and firebreaks. Aerial observation will be severely restricted in both mixed and coniferous forests due to the presence of dense canopies; aerial observation into deciduous forests will be somewhat restricted because of the broken canopies. In the orchards and vineyards, observation and FofFs will not be significantly affected or restricted but will be best along rows. The canopies of the forests will reduce the effectiveness of indirect fire weapons. Ground radars will not be effective in forested areas except in the clearings and along the firebreaks and trails. FofFs in the meadows and pasturelands will be excellent.

(d) Artificial features. Church steeples in the numerous villages afford excellent observation points. Villages and farm buildings will limit FofFs for flat-trajectory weapons.

(2) Concealment and cover.

(a) Weather conditions. Weather permits poor air and ground observation for 31 Aug – 2 Sep. Thereafter weather permits good air and ground observation after fog burnoff in early morning. Weather favors our, but not enemy's use of smoke.

(b) Relief. The terrain affords partial cover and concealment from ground observation and direct fires. Steep slopes, road and railroad cuts and embankments provide good concealment and cover from observation and direct fires. The steep slopes will afford some cover from indirect-fire weapons.

(c) Vegetation. The coniferous and mixed forests present throughout the area provide excellent concealment from both ground and aerial observation. Deciduous forests give excellent concealment from ground observation because of the breaks in the canopy. All forested areas give good cover from indirect fire and excellent cover from small arms fire. Orchards and vineyards provide little concealment from either ground or aerial observation. Limited cover from small-arms fire is provided in the orchards; however, cover from small-arms fire is almost nonexistent in the vineyards.

Figure 3-8. Preparation of paragraph 3a.

(d) Artificial features. Buildings throughout the area provide excellent concealment from all observation. Excellent cover is afforded by these buildings against small-arms fire and shell fragments from indirect fires. Artillery fire and aerial bombardment will reduce the structures to rubble. Cellars in the buildings will provide cover against small-arms and indirect fires. Embankments and cuts along the roads and railroads will give concealment from ground observation and cover from direct-fire weapons.

(3) Obstacles.

(a) Relief. The FULDA and WERRA rivers and HILLS 500 and 511 (NB627326), 524 (NB611363), 455 (NB601411) and 389 (NB563354) are major obstacles within the battlefield area. The riverbed and banks of the FULDA river are capable of handling both wheeled and tracked vehicles. The riverbanks and beds may deteriorate rapidly if used repeatedly in the same location or during periods of heavy precipitation. The steep slopes associated with the hills listed above will greatly restrict maneuvering of all types of vehicles.

(b) Vegetation. Forested areas of all types will severely impede vehicular traffic. Orchards and tree-lined roads will not significantly hinder vehicular movement.

(c) Surface materials. Trafficability, except in the vineyards, is good throughout the area; however, it will be greatly degraded during periods of prolonged or heavy precipitation.

(d) Artificial features. Streets in the villages and towns are suitable for only single lane traffic. The destruction of buildings will impede the movement of vehicular traffic. Embankments and cuts along the highways and railroads will impede vehicular movement because of the steep slopes.

(4) Key terrain features.

(a) HILL 500 (NB627332) and HILL 511 (NB627326) control the secondary highway network between HEIMBOLDSHAUSEN (off map) (NB670340), RANSBACH (NB640310), and SCHENKLINGSFELD (NB590302). They also provide control and canalization of the AAs in that area. The mission will be seriously jeopardized if these areas are not secured.

(b) HILL 524 (NB611363) provides control of a major avenue of approach to BAD HERSFELD, a major road junction located in the town of FRIEDEWALD (NB606374), and traffic on Highway 62. HILL 524 provides canalization in conjunction with HILL 500 and the major ridge line to the immediate north. It is key terrain if our tactical plans call for either a main attack or a supporting attack in the area.

(c) The north ridge line from approximately NB5535 to NB6242 controls the high speed AUTOBAHN throughout most of the AO. Control of this ridge is necessary to continuation of defensive measures.

Figure 3-8. Preparation of paragraph 3a (continued).

(d) All bridges and overpasses within the area are key factors to delaying operations until destroyed. Destruction of these facilities will slow the advance of tank and motorized forces.

(5) Avenues of approach (AAs).

(a) Available to enemy into our positions.

1 AA1. Axis HILL 511 (NB627326) – HILL 399 (NB575323) – HILL 422 (NB557331) – PETERSBERG (NB520350) – BAD HERSFELD. This AA is a high-speed approach into BAD HERSFELD and provides good observation and FofFs except in the wooded areas between HILL 399 and the AUTOBAHN road junction (NB530343). Excellent concealment and cover are obtained in the wooded area. Once the enemy reaches the high ground east of PETERSBERG, he will have excellent observation and FofFs into BAD HERSFELD and the high ground around the city. This AA has severe slopes which may slow down the enemy's advance. It provides adequate maneuver space for an enemy regimental-sized unit.

2 AA2. Axis HILL 524 (NB611363) – HILL 406 (NB592360) – HILL 389 (NB563354) – PETERSBERG (NB520350) – BAD HERSFELD. This AA is a high ground approach into BAD HERSFELD and provides excellent observation and FofFs. It would provide control of Highway 62, a high-speed armor approach into BAD HERSFELD. Once HILL 389 (NB563354) is seized, it provides a downhill approach all the way into BAD HERSFELD. This approach provides adequate maneuver space for a regimental-sized unit.

3 Approach C. Axis AUTOBAHN – Junction with Highway 62 (NB553353) – BAD HERSFELD. This approach is a high-speed armor approach; use of it would require control of the high ground both north and south of the AUTOBAHN. Observation and FofFs from the high ground north and south are good. Using the high ground north and south would provide adequate maneuver space for a regimental-sized unit.

(b) HILL 524 (NB611363) provides control of a major avenue of approach to BAD HERSFELD, a major road junction located in the town of FRIEDEWALD (NB606374), and traffic on Highway 62. HILL 524 provides canalization in conjunction with HILL 500 and the major ridge line to the immediate north.

(c) Available to friendly forces into the enemy's positions. At this time you would consider any and all axis of advance that friendly forces may use to counter the enemy's attack. The description and discussion would follow the same format as just described for the enemy's avenues.

Figure 3-8. Preparation of paragraph 3a (concluded).

NOTE: At this time, it is important you realize the solutions presented here are not the only acceptable ones. What is critical, however, is if you understand that under each of the preceding topical headings, the necessary elements of weather and terrain are discussed. Under terrain the four major elements of relief, vegetation, surface materials, and artificial features are examined and presented in the analysis.

5. Preparation of paragraph 3b. The following example (Figure 3-9) shows how to prepare subparagraph 3b, Combat Service Support Aspects.

3. MILITARY ASPECTS OF THE AREA.

b. Combat Service Support Aspects.

(1) Personnel. *The pro-western population can provide skilled workers from manufacturing plants.*

(2) Logistics. *Because the battlefield is primarily an agricultural area, it is possible limited quantities of food may be available to supplement troop rations.*

(3) CMO. *The populace will view the destruction of their homes and industry as a result of enemy activities. Care should be taken to ensure actual military targets exist in the villages and towns before destroying them; otherwise, the populace will react unfavorably to what appears to be senseless destruction of personal and community property.*

Figure 3-9. Preparation of subparagraph 3b.

NOTE: As you can see from the foregoing, a great and varying amount of data interpretation and thought processing are required to prepare paragraph 3 of the analysis. The purpose of this lesson is to acquaint you with the format and the types of information used to prepare this part of the analysis. While no two individuals will prepare the analysis using the same rationale, if you remember the required areas that are evaluated and how they are presented, you will be able to prepare the analysis of the battlefield in a competent manner.

LESSON 3

PRACTICE EXERCISE

The following items will test your grasp of the material covered in this lesson. There is only one correct answer for each item. When you have completed the exercise, check your answers with the answer key that follows. If you answer any item incorrectly, study again that part of the lesson which contains the portion involved.

1. Which considerations should you primarily base the analysis of an AA on?
 - A. Climate.
 - B. Weather conditions.
 - C. Terrain.
 - D. Other characteristics.
2. What should you consider as protection from the effects of fire?
 - A. Concealment.
 - B. Cover.
 - C. Obstacles.
 - D. Key terrain features.
3. Which AAs should be free of obstacles or obstructions?
 - A. Ground.
 - B. Rear.
 - C. Defensive.
 - D. Air.
4. Given the following information from paragraph 2 of the analysis of the battlefield area (Figure 3-10), prepare subparagraph 3a(2), (tactical aspects for) concealment and cover.

MISSION: Attack north 140600Z Sep to seize objective "X". Be prepared to continue attack north on corps order.

2. GENERAL DESCRIPTION OF THE AREA.

a. Climate or Weather Conditions.

(1) Climate (Annex A).

(2) Weather forecast, 10 – 12 September 19__.

(a) Precipitation. None predicted.

(b) Fog. Moderate to heavy ground fog from 0300-0700 daily. Heaviest concentrations will be found along the streams and in low lying areas.

(c) Temperature. From 41-70° F.

(d) Relative humidity. Varying from 58% during early morning to 78% in the afternoon.

(e) Cloudiness. 15-25% cloud cover will be present from 8,000-10,000 ft.

(f) Visibility. 9-14 km except in early morning ground fog; then visibility will be reduced to 100-500 m.

(g) Pressure. Average about 30 inches (990 millibars).

(h) Wind. Surface winds from the south-southeast at 6-8 knots. Winds aloft for nuclear yields of tactical interest about 15 knots from the south.

(i) Light data.

DATE	BMNT	BMCT	EECT	EENT	MOONRISE	MOONSET
13 Sep	0447	0507	1847	1907	2035	0956
14 Sep	0448	0508	1845	1905	2107	1102
15 Sep	0450	0510	1842	1902	2142	1203

Figure 3-10. Paragraph 2 for Practice Exercise.

b. **Terrain.** The battlefield area can be divided into two distinctly different zones. The eastern zone is in the STEIGERWALD (forest) which is characterized by the presence of very steep slopes and dense vegetation. The western zone consists of a series of rolling plains commonly referred to as the FRANCONIAN SCARPLANDS. The latter zone is predominantly clear and open; however, occasional patches of dense vegetation are also present.

(1) **Relief and drainage systems.**

(a) Relief in the FRANCONIAN SCARPLANDS consists of rolling hills and relatively flat river and stream valleys. The slope in the area does not exceed 15% except in the SCHWANBERG (vic NA9108 to NA9508) where slopes may exceed 55%. This area rises from 270-470 m in a distance of 500 m. The elevation rises from approximately 180 m along the eastern bank of the MAIN river to about 300 m along the western edge of the STEIGERWALD (the edge of the STEIGERWALD follows a trace that extends north-east from vic NV9599 to vic PA0330). The SCHWANBERG (vic NA9208) and the KAPELLBERG (vic NV9098) are segments of the STEIGERWALD which extend over the eastern periphery of the FRANCONIAN SCARPLANDS. Within the scarplands the ridge lines run generally east-west, forming a series of gently sloping hills with elevations varying between 250-300 m.

(b) Relief along the western edge of the STEIGERWALD is characterized by moderate to steep slopes (20% to 55%). Elevations in the scarplands vary from 300 m to 400-500 m within a distance of 500m in the area from KAPELLBERG (vic NV9098) to approximately PA0004, the edge of the forest coincides with the steep slopes. From vic PA0014 to vic PA0330 the STEIGERWALD extends west of the area characterized by the presence of steep ridge lines extending generally east-west. Slopes vary from gentle to over 50%. The gentle slopes coincide with the river valleys.

(c) **Drainage.** Drainage in the area is generally good, with the drainage system capable of quickly draining light to moderate precipitation. The area is drained primarily by secondary streams flowing west through the FRANCONIAN SCARPLANDS into the MAIN river (off the map to the west), and by secondary streams that flow east through the STEIGERWALD into the REGNITZ river (off the map to the east). The steep slopes on the western edge of the STEIGERWALD form the dividing line that determines direction of stream flow. The primary rivers and streams are:

1 Two major streams in the STEIGERWALD are the MIELE EBRACH and the RAUHE EBRACH. Both of these streams average 4 m in width and .8 m in depth and are fordable by all vehicles.

2 The only river of significance in the FRANCONIAN SCARPLANDS is the SCHWARZACH. This river—the banks and bottom consist of sandy clay—flows south-southwest into the MAIN river. It averages 14 m in width and 2-4 m in depth, thus making it unfordable to vehicles without deep water fording apparatus.

Figure 3-10. Paragraph 2 for practice exercise (continued).

3 Numerous other small streams flow throughout the area but all are less than 4 m wide and 1 m deep. These streams will not impede movement through the area.

(2) Vegetation.

(a) Deciduous forest. Composed primarily of broadleaf oak, beech, and hornbeam trees. Small woodlots consisting of deciduous trees are found in the FRANCONIAN SCARPLANDS and at lower elevations of the STEIGERWALD. The trees are spaced from 1.5-5 m apart, are 30-80 cm thick, and 15-20 m tall. A broken canopy is present about 5 m above the ground where leaves and branches intersperse. During September the leaves change color; however, the leaves do not drop from the trees until October. Undergrowth in the area consists of grasses not more than .5 m tall except on steep slopes.

(b) Coniferous forest. Composed primarily of pine and spruce trees that grow at the higher elevations of the STEIGERWALD. The trees are spaced 1-3 m apart, and are 15-40 cm thick and 15-35 m tall. A dense canopy is present about 10 m above the ground where the branches of adjacent trees become intertwined. No significant underbrush exists due to the dense canopy that precludes the growth of weeds and small bushes.

(c) Mixed forest: Composed of pine, spruce, oak, and hornbeam trees in the FRANCONIAN SCARPLANDS, and pine, spruce, and beech trees in the STEIGERWALD. The trees are spaced from 1-5 m apart in both areas. In the scarplands, the trees range from 15-60 cm in thickness, from 15-30 m in height, and a dense canopy exists about 8-10 m above the ground. In the STEIGERWALD, the trees range 15-40 cm in thickness and 20-35 m in height, and a dense canopy exists about 10 m above the ground. The mixed forest areas of both the scarplands and the STEIGERWALD contain limited amounts of underbrush in the form of seedlings 1 to 2 m tall.

(3) Surface materials (Omitted).

(4) Artificial features.

(a) Roads. There are two major roads in the battlefield area. Numerous secondary roads, farm roads, and forest trails are also present. *Principal roads are:*

1 Highway 22. A hard-surface, east-west road located in the north. The road is 6-8 m wide and in excellent condition. It has no overpasses or underpasses; however, there are five class 50 or higher bridges along the route. Numerous cuts, with slopes of 50-100% exist along this road as it traverses the STEIGERWALD.

2 Highway 286. A hard-surface, all-weather, north-south road that is 6-8 m wide. All the overpasses and the one bridge at NA972222 on the route are of reinforced concrete and class 50. Numerous cuts, with slopes of 60-100%, are present along the route.

3 Secondary roads are 4-6 m wide and hard-surface, all-weather routes capable of sustaining military traffic; maintenance will be necessary. Many of these roads are tree-lined; bridges and overpasses are class 40 or higher.

Figure 3-10. Paragraph 2 for practice exercise (continued).

(b) Bridges. All bridges in the area are intact.

(c) Railroads.

1 A standard-gauge, multiple-track railroad transverses the western edge of the STEIGERWALD from MARKTBREIT (vic NA8282 through NC7933. The tracks and overpasses along the route are in good condition.

2 A standard-gauge, single-track railroad enters the AO from the east (vic PA1920) and parallels Highway 22. This railroad, the tracks of which are in good condition, terminates in ERBACH (vic PA0723).

3 All the railroads have numerous embankments and cuts with slopes ranging from 75-100%. No tunnels are present on any route.

(d) Buildings. Most of the buildings in the area are concentrated in the villages and cities. The buildings, located very close to each other are primarily of wood and masonry construction, two stories in height, and have narrow windows with wooden shutters. Most of the buildings have cellars varying in size and depth. Almost every village contains a church of one construction; the churches invariably have high steeples. The streets in the towns and villages are very narrow and, except for major thoroughfares, will allow only one-way traffic.

Figure 3-10. Paragraph 2 for practice exercise (concluded).

LESSON 3

PRACTICE EXERCISE

ANSWER KEY AND FEEDBACK

- | <u>Item</u> | <u>Correct Answer and Feedback</u> |
|-------------|--|
| 1. | C. You should base the analysis of an AA on terrain considerations (page 3-7, Remember). |
| 2. | B. You should consider cover as protection from the effects of fire (page 3-2, para 2b(2)). |
| 3. | D. The air avenue of approach should be free of obstacles and obstructions (page 3-7, para 2e(5)(b)). |
| 4. | Following is an example (Figure 3-11) how to complete paragraph 3a(2), concealment and cover, based on provided information (pages 3-2/3-22, para 2b/fig 3-8). |

(2) Concealment and cover.

(a) Weather conditions. Early morning ground fog offers concealment from visual observation.

(b) Relief. The rolling terrain of the FRANCONIAN SCARPLANDS affords partial concealment and cover from ground observation and direct fire. Steep slopes in the STEIGERWALD provide good concealment and cover from ground observation and direct fire and cover from indirect fire.

(c) Vegetation. The coniferous and mixed forests present throughout the AO provide excellent concealment from both ground and aerial observation. Deciduous forests give excellent concealment from both ground and aerial observation. Coniferous forests give excellent concealment from ground observation, but only partial concealment from aerial observation because of the presence of breaks the canopy. All forested areas provide good cover from indirect fire and excellent cover from small-arms fire.

(d) Artificial features. Buildings throughout the area provide excellent concealment from all observation. Excellent cover is afforded by these buildings against small-arms fire and shell fragments; artillery fires and aerial bombing will reduce the structures to rubble. Cellars in the buildings will provide cover against small arms and indirect fires. Embankments and cuts along Highways 22 and 286, and the railroads will provide concealment from ground observation and cover from direct-fire weapons.

Figure 3-11. Example paragraph 3a(2).

LESSON 4

EFFECTS OF CHARACTERISTICS OF THE AREA AND ANALYSIS ENDING DATA

CRITICAL TASKS: 301-336-1100
301-372-2050
301-372-3050

OVERVIEW

LESSON DESCRIPTION:

In this lesson you will learn to prepare paragraph 4 (effects of characteristics of the area) of the analysis of the battlefield area and the analysis ending data.

TERMINAL LEARNING OBJECTIVE:

- TASKS:** Prepare paragraph 4 of the analysis of the battlefield area and analysis ending data
- CONDITION:** You will be given access to extracts from FM 34-3, FM 34-130, and FM 101-5.
- STANDARD:** Preparation of paragraph 4 of the analysis of the battlefield area and analysis ending data will be in accordance with FM 34-3, FM 34-130, and FM 101-5.
- REFERENCES:** The material contained in this lesson was derived from the following publications:
- FM 34-3.
 - FM 34-130.
 - FM 101-5.

INTRODUCTION

After completing the heading and paragraphs 1, 2, and 3, you should prepare paragraph 4, effects of characteristics of the area, in the analysis of the battlefield area. Many important decisions made by the commander and his staff will depend on the reliability of the information contained in paragraph 4. Therefore, it is essential sound conclusions be drawn from factual data.

PART A: EFFECTS OF CHARACTERISTICS OF THE AREA

1. Paragraph 4 is entitled "Effects of Characteristics of the Area." It contains the conclusions developed from the analysis in the previous paragraphs. The conclusions are stated in terms of effects on the general courses of action available to both forces.

2. Paragraph 4a is entitled "Effect on Enemy Courses of Action." List, in turn, each significant possible enemy course of action such as-

- Defense.
- Withdrawal.
- Attack.
- Use of enemy air, armor, nuclear fires, chemical and biological agents, and guerrillas.

NOTE: Accompany each listed course of action (using separate subparagraphs) with a discussion to indicate the characteristics of the area favoring the courses of action. For attack courses, show the best AA for the enemy. For defense courses of action, show the best defensible areas and the best AA leading to these areas (Figure 4-1).

4. EFFECTS OF CHARACTERISTICS OF THE AREA.

a. Effect on Enemy Courses of Action.

(1) Effect on enemy defense.

(a) The weather favors defense. The excellent visibility except when early morning ground fog or darkness is present, limits unobserved friendly movement toward the enemy positions and will permit the enemy to use its supporting fires to the maximum.

(b) The terrain in the FRANCONIAN SCARPLANDS does not favor the enemy's defense in place. The relatively flat, clear terrain does not offer the enemy any vantage points from which to observe, and destroy our force. If the enemy decides to defend, his best defensive positions will be along the line of the SCHWANBERG hill complex (NB9308). This area is a natural defensive position and offers excellent observation and fields of fire, concealment and cover, and general control over the surrounding area.

(c) The best AA to our objective is axis HUETTENHEIM (vic NA9000) – PRICHSENSTADT (vic NA9719).

(2) Effect on enemy withdrawal.

(a) Retrograde. Conditions are favorable for the use of this tactic because of the presence of an extensive road network which would facilitate ease of movement by its motorized and armored units. The SCHWANBERG hill complex would offer concealment and cover, observation and fields of fire over all AAs from the south, and is a natural obstacle friendly forces would have to seize or bypass.

Figure 4-1. Example of paragraph 4a.

(b) Delay. Conditions favor the use of the delay because of the in-depth prepared positions and the natural obstacles prevalent throughout the area.

(3) Effect on enemy attack.

(a) Best AA is axis MAINBERNHEIM (vic NA8808) – HUETTENHEIM (vic NA9000).

(b) Excellent visibility limits unobserved enemy movement toward our positions, except during darkness or when ground fog is present. Lack of precipitation favors cross-country mobility.

(c) The terrain in the FRANCONIAN SCARPLANDS would initially favor its attack because of the presence of extensive relatively flat and clear areas. It should, however, become canalized as it moved south because of the severe ridge lines located about 8 km to its front. The enemy would be forced to seize the ridge line because whoever controls this terrain also controls the surrounding area.

(4) Effect on enemy air. Weather favors the enemy's use of its air capability. Main and secondary roads could be used as forward landing strips.

(5) Effect on enemy armor.

(a) The terrain in the FRANCONIAN SCARPLANDS favors large-scale armor use.

(b) The terrain in the STEIGERWALD area severely limits armor operations because of the presence of steep slopes and dense forests.

(c) Trafficability will be excellent if there is no precipitation. Enemy armor units can move without fear of visual observation during periods of darkness or when ground fog is present.

(6) Effect on enemy use of nuclear weapons.

(a) Prevailing winds do not favor the use of nuclear weapons because of the adverse fallout.

(b) The presence of dense forests and steep slopes in the STEIGERWALD area will limit the blast and thermal effects of nuclear weapons; however, obstacles in the form of forest fires and trees lying across the roads will impede trafficability.

(7) Effect on enemy use of chemical and biological agents.

(a) The prevailing surface winds favor the use of chemical and biological agents.

(b) Stream valleys and extensive wooded areas favor the enemy's use of persistent chemical forces.

Figure 4-1. Example of paragraph 4a (continued).

(8) Effect on enemy use of guerrillas.

(a) The pro-western population present in the battlefield area does not favor the enemy's use of indigenous guerrilla forces.

(b) The STEIGERWALD area offers the most suitable terrain for enemy forces to conduct guerrilla warfare.

Figure 4-1. Example of paragraph 4a (concluded).

3. Paragraph 4b is entitled "Effect on Own Courses of Action." Discuss those broad courses of action that will accomplish or facilitate the accomplishment of the stated mission of your command or unit. The mission will be to attack, defend, or withdraw. You will also include in the discussion the use of friendly air, armor, nuclear fires, chemical and biological agents, and irregular forces.

NOTE: The most significant difference between the discussion of the enemy's courses of action and the friendly courses of action is you discuss all the courses of action available to the enemy while you only present the course of action dictated by the mission statement for friendly forces. You do, however, discuss the capabilities of air, armor, NBC, and irregular forces just as you did for the enemy (Figure 4-2).

4. EFFECTS OF CHARACTERISTICS OF THE AREA.

a. Effect on Enemy Courses of Action (see Figure 4-1).

b. Effect on Own Courses of Action.

(1) Effect on friendly attack.

(a) Our best axis of advance is axis HUETTENHEIM (vic NA9000) – PRICHSENSTADT (vic NA9719) – Objective.

(b) The absence of precipitation will favor cross-country movement by friendly forces. Ground fog in the early morning will mask the movement of our forces. The excellent visibility during the periods when neither darkness nor fog is present will hamper the unobserved movement of friendly forces.

(c) The terrain in the FRANCONIAN SCARPLANDS favors a mechanized attack because of the good trafficability, the absence of obstacles, and the relatively flat terrain.

(d) The terrain in the STEIGERWALD favors a dismounted infantry. It will not be greatly impeded because of the presence of the large tracts of forest.

(2) Effect on friendly air. Weather conditions favor the use of friendly air except when early morning ground fog is present. The presence of steep slopes and dense vegetation may

Figure 4-2. Example of paragraph 4b.

decrease the effectiveness of aerial observation and fire.

(3) Effect on friendly armor. The terrain in the FRANCONIAN SCARPLANDS favors large-scale use of friendly armor. Armor operations in the STEIGERWALD will be hampered because of the presence of steep slopes and dense forests. The lack of precipitation favors cross-country mobility; however, if heavy rains do occur, trafficability will be severely degraded.

(4) Effect on friendly use of nuclear weapons. The prevailing winds favor the use of nuclear weapons.

(5) Effect on friendly use of chemical and biological agents. Surface winds do not favor the use of chemical and biological agents.

Figure 4-2. Example of paragraph 4b (concluded).

4. Preparation of paragraph 4. At this point, you have seen examples of how paragraphs 4a and 4b are prepared. On the following pages are extracts of paragraphs 2 (Figure 4-3) and 3 (Figure 4-4) developed earlier. Following these extracts, you will find paragraph 4 prepared using this information (Figure 4-5).

a. Extract -Paragraph 2 (Figure 4-3).

MISSION: To delay in-zone, and on order, move west to the west bank of the FULDA river.
Assume defensive positions on the west bank of the FULDA river.

2. GENERAL DESCRIPTION OF THE AREA.

a. Weather Conditions. Weather forecast for the period 310001Z Aug 19__ to 042400Z Sep 19__.

(1) Precipitation. Light rain with periods of moderate to heavy rain beginning early 01 Sep and ending late 02 Sep.

(2) Fog. Dense fog forming in early morning hours in low areas. Will burn off by 0730 hours but may persist for longer periods during periods of precipitation.

(3) Temperature. Lows at night approximately 45° F. with daytime temperatures ranging from 58-70° F.

(4) Cloudiness. Clear until 312000Z Aug with clouds forming gradually thereafter. Estimated 80-100% cloud cover from 010300Z Sep to 021900Z Sep. Ceiling will vary 700-1500 ft above ground level during this period. Clear skies from 030400Z Sep during the rest of the reporting period. Ceilings unlimited.

(5) Visibility. 10-14 km. During fog, visibility will be reduced to 100-500 m. Visibility during precipitation vary from 1-2 km.

Figure 4-3. Extract -paragraph 2.

(6) Atmospheric pressure. Average about 30 inches (990 millibars).

(7) Wind. Surface winds from the south-southeast at 7-9 knots. Winds aloft for nuclear yields of tactical interest about 15 knots from the southwest.

(8) Light Data.

DATE	BMNT	BMCT	EECT	EENT	MOONRISE	MOONSET
31 Aug	0447	0507	1847	1907	2035	0956
01 Sep	0448	0528	1845	1905	2107	1101
02 Sep	0450	0510	1842	1902	2142	1203
03 Sep	0452	0531	1839	1858	2204	1300
04 Sep	0455	0557	1835	1823	2259	1359

b. Terrain.

(1) Drainage and relief.

(a) Drainage. Drainage in the battlefield area is generally good, and the drainage system is capable of quickly draining light to moderate precipitation. The battlefield area is drained to both the east and west by numerous small intermittent streams which empty into the FULDA river in the west and the WERRA river in the east. Numerous agricultural irrigation canals carry water to the farmland in the countryside.

1 FULDA river. The FULDA river is approximately 6-45 m wide and from 1-3 m deep. Current normally is relatively slow with a speed of 3-5 kmh. After 1-1.5 hours of heavy rain, depth may increase to 3-5 m and speed may increase to 6-10 kmh. The riverbed is capable of supporting both wheeled and tracked vehicles during crossing and, in most areas, riverbeds and banks are favorable for fording.

2 WERRA river. The WERRA river is approximately 20-40 m wide and from 1.2-2.5 m deep. The current speed is normally 2-4 kmh. Heavy rains may increase the speed to 3-6 kmh and the depth to 2-4 m. The riverbeds and banks are capable of supporting wheeled vehicles only.

3 Numerous other small streams flow throughout the area but all are less than 4 m wide and 1 m deep. These streams will not impede movement through the area.

(b) Relief. Relief in the battlefield area is divided into three general elevations with higher terrain running north to south throughout the center of the FRIEDEWALD area (NB6440) and with river valleys to both the east and west.

1 WERRA river valley. This valley runs generally north and south. Elevation in this area is between 150 and 300 m and rises to both the east and west.

Figure 4-3. Extract — paragraph 2 (continued).

2 FRIEDEWALD. The preponderance of the battlefield area is higher terrain which rises from the WERRA river valley to heights of 500-600 m. Major features in the FRIEDEWALD are a northeast-southwest ridge line in the central to the northeast portions of the area, and individual hill masses in the central and southern regions. Slopes associated with the hill masses and ridge lines exceed 40% in some areas.

3 FULDA river valley. Elevations in this area fall away from south to north and rise from the valley to the east and west. Elevations are similar to those found in the WERRA river valley. The terrain rises rapidly to the west to the 400-500 m level.

(2) Vegetation.

(a) Forested areas are comprised primarily of mixed coniferous and deciduous trees with a preponderance of coniferous trees in forests at lower elevations. HILL 511 (NB627326) and HILL 524 (NB611363) are forested primarily with deciduous trees. All forests contains small clearings, trails not more than 2.5 m wide, and frequent firebreaks that are usually 3-5 m wide and cleared of underbrush.

1 Deciduous forest. Composed primarily of broadleaf oak, beech, and hornbeam (birch) trees. The trees are spaced from 1.5-3 m apart, are 30-88 cm thick, and 15-20 m tall. A broken canopy is present about 5 m above the ground where leaves and branches intertwine. During September the leaves change color, but they do not fall from the trees until October. Undergrowth consists primarily of grasses not more than .5 m tall except on step slopes.

2 Coniferous forest. Composed primarily of pine and spruce trees that grow at the lower elevations. The trees are spaced from 1-3 m apart, are 15-40 cm thick, and 15-35 m tall. A dense canopy is present approximately 10 m above the ground where the branches of adjacent trees intertwine. No significant underbrush exists because of excellent forestry management programs and periodic logging operations. The dense canopy also precludes the growth of weeds and small bushes.

3 Orchards. In the apple orchards the trees are planted in well kept rows; 5-8 m between rows and 2 to 3 m between trees within the rows. The trees are 20-30 cm thick, 5 m tall, branching 2 m above the ground. Neither a canopy nor underbrush, except grasses which grow to a maximum height of .3 m, is present in the orchards. Apples will be ready for harvest in October.

4 Vineyards. The grapevines are planted in well-kept rows. 1 m between rows and .5 m between plants within the rows. Each vine grows entwined around a wooden stake, is carefully pruned, and does not exceed 1 m in height. There is no underbrush and the soil remains soft as a result of frequent watering. The vineyards are separated into sections by a series of access roads, not exceeding 2 m in width, surfaced with asphalt. Grapes are harvested from late September to early December.

Figure 4-3. Extract — paragraph 2 (continued).

(b) Meadows and pastureland. The crops are grown in alternating strips of rye, wheat, and hay, do not exceed .5 m in height at this time of the year. Pasturelands and meadows are used for grazing purposes and consist of grasses not more than .3 m in height. There are no fences surrounding the cropland and meadows. Fences surrounding the pasturelands are generally made of wooden posts and two or three strands of barbed wire.

(3) Surface materials. The high ridges of this area are covered with sandy soil mixed with clay or silt. These soils provide good trafficability at all times. The soil of the lower areas consists of silt and moderately plastic clays which, during periods of prolonged or heavy rains, become unstable and do not provide good trafficability.

(4) Artificial features.

(a) Roads. There are three major east-west roads in the AO. Numerous secondary roads, farm roads, and forest trails are also present. Conditions and dimensions of the principal roads are as follows:

1 EISENACH AUTOBAHN. A northeast-southwest AUTOBAHN is located in the center of the AO. Each directional route is two lanes (10 m) wide. The directional routes are separated by a strip of vegetation 8-20 m wide. The surface is of bituminous asphalt. The shoulders are made of bituminous gravel, 2.5 m wide, and in good condition. The AUTOBAHN is in excellent condition and capable of carrying heavy military traffic for extended periods. Destroyed culverts can be easily bypassed. Numerous overpasses and underpasses exist along the route; all are concrete and have a minimum clearance of 4.5 m. All the overpasses over other roads carry a classification of 40 or higher. A major bridge is located at the HAUNE river (NB5033), constructed of reinforced concrete, and is class 80. Bypasses are available adjacent to all bridges and overpasses located on this route. There are numerous cuts and embankments along the AUTOBAHN with slopes varying from 75-100%.

2 Highway 62. A hard-surface, east-west road which intersects with the EISENACH AUTOBAHN at NB553353 and runs from PHILIPPSTHAL (NB708322 to BAD HERSFELD (NB503350)). It is 6-8 m wide and in excellent condition. It has no overpasses or underpasses on the route but does have one Class 60 concrete bridge over the FULDA river and a class 40 bridge over the ULSTER river (NB695327).

3 Secondary roads in the area are 4-6 m wide and hard-surface, all-weather routes capable of sustaining military traffic (although maintenance will be necessary). Many of these roads are tree-lined; bridges and overpasses on them are class 40 or higher.

4 All other roads in the area are light surface or dirt roads that measure 2-4 m in width. The roads will sustain military traffic during good weather; however, during periods of prolonged or heavy precipitation, it is doubtful they can sustain military traffic. Most of these roads will, in all likelihood, become impassable. Bridges on these roads do not exceed class 20.

(b) Bridges. All major bridges are still intact but have been prepared for demolition.

Figure 4-3. Extract — paragraph 2 (continued).

(c) Railroads.

1 A standard-gauge, multiple-track railroad runs north to south along the FULDA river. Numerous highway overpasses exist along the route. The only major bridge on this route is at NB5443 and a class 100 bridge.

2 A standard-gauge, single-track spur runs roughly parallel to the 2nd Brigade northern boundary. Numerous overpasses exist along the route.

3 A standard-gauge, single-track railroad runs north to south along the WERRA river with numerous bridges or overpasses. All bridges are class 60.

4 A standard-gauge, single-track railroad runs in the southern portion of the AO. No major bridges or overpasses are found along this route.

5 All railroad bridges, overpasses, and tracks in this area are in excellent condition. Major bridges and selected overpasses have been prepared for demolition.

6 All the above railroads have numerous embankments and cuts with slopes ranging from 75-100%. There are no tunnels on any of the routes.

(d) Buildings. Most of the buildings in the area are concentrated in the villages and cities. The buildings located very close together are primarily of wood and masonry construction, two stories in height, and have narrow windows equipped with wooden shutters. Most of the buildings have cellars varying in size and depth. Virtually every village contains a church of stone construction; the churches have steeples. The streets in the towns and villages are very narrow and, except for major thoroughfares, will allow only one-way traffic.

(e) Airports. No information available.

c. Additional Characteristics.

(1) Sociology. The area is generally rural. The population density in the area is approximately 250 people per square mile. The major population centers are located in the western half of the area.

(2) Government. Politically, the population is close-knit. Every town of 250 and more people has a Burgermeister (Mayor) and town council form of government. The populace is pro-Western and can be expected to aid allied operations.

(3) Economics. Major occupations are farming, wine production, fruit growing, and manufacturing. The populace is prosperous and basically middle class.

(4) Religion. The inhabitants are 71% Roman Catholic, 26% percent Protestant, and 3 percent other.

Figure 4-3. Extract — paragraph 2 (concluded).

3. MILITARY ASPECTS OF THE AREA.

a. Tactical Aspects.

(1) Observation and FofFs.

(a) Weather. Ground fog will reduce visibility to 100-500 m from early morning until about 0730 daily, especially in low-lying areas. Visibility during light to moderate precipitation will be from 1-2 km with ceilings from 700-1500 m which will severely restrict aerial observation. At all other times, good ground and air observation should exist. Winds aloft favor the friendly use of nuclear weapons while surface winds favor enemy use of chemical and biological weapons.

(b) Relief. Good FofFs and ground observation in both river valleys. Observation and FofFs within the higher elevations will be constricted by irregular terrain. High terrain immediately east and west of the river valleys offers good observation into both valleys.

(c) Vegetation. In all the types of forests present in the area ground observation and FofFs will be restricted primarily to trails, clearings, and firebreaks. Aerial observation will be severely restricted in both mixed and coniferous forests due to the presence of dense canopies; aerial observation into deciduous forests will be somewhat restricted because of the broken canopies. In the orchards and vineyards, observations and FofFs will not be significantly affected or restricted but will be best along the rows. The canopies of the forests will reduce the effectiveness of indirect-fire weapons. Ground radars will not be effective in forested areas except in the clearings and along the firebreaks and trails. FofFs in the meadows and pasturelands will be excellent.

(d) Artificial features. Embankments and cuts along the highways and railroads will restrict ground observation. Village church steeples will provide good vantage points for observation over the surrounding areas; however, tree height will impede observation in some areas.

(2) Concealment and cover.

(a) Weather. Early morning ground fog offers concealment from visual observation. Low ceilings will drastically reduce the effectiveness of aerial support.

(b) Relief. The terrain affords partial concealment and cover from ground observation and direct fires. Steep slopes, road and railroad cuts and embankments provide good concealment and cover from indirect-fire weapons.

Figure 4-4.. Extract — Paragraph 3.

(c) **Vegetation.** The coniferous and mixed forests present throughout the area provide excellent concealment from both ground and aerial observation. Deciduous forests give excellent concealment from ground observation, but only partial concealment from air observation because of the breaks in the canopy. All forested areas give good cover from indirect fire and excellent cover from small-arms fire. Orchards and vineyards provide little concealment from ground or aerial observation. Limited cover from small-arms fire is provided in the orchards; however, cover from small-arms fire is almost nonexistent in the vineyards.

(d) **Artificial features.** Buildings throughout the area provided excellent concealment from all observation. Excellent cover is afforded by these buildings against small-arms fire and shell fragments from indirect fires. Artillery fire and aerial bombardment will reduce the structures to rubble. Cellars in the buildings will provide cover against small-arms and indirect fires. Embankments and cuts along the roads and railroads will give concealment from ground observation and cover from direct-fire weapons.

(3) **Obstacles.**

(a) **Relief and drainage.** The FULDA and WERRA rivers and HILLS 500 and 511 (NB627326) 524 (NB611363) 455 (NB607411) and 389 (NB563354) are the major obstacles within the battlefield area. The riverbed and banks of the FULDA river are capable of handling both wheeled and tracked vehicles while the riverbed and banks of the WERRA river will accept only wheeled vehicles. The riverbanks and beds may deteriorate rapidly if used repeatedly in the same location or during periods of heavy precipitation. The steep slopes associated with the hills listed above will greatly restrict maneuvering of all types of vehicles.

(b) **Vegetation.** Forested areas of all types will severely impede vehicular traffic. Orchards and tree-lined roads will not significantly hinder vehicular movement.

(c) **Surface materials.** Trafficability, except in the vineyards, is good throughout the area; however, it will be greatly degraded during periods of prolonged or heavy precipitation.

(d) **Artificial features.** Streets in the villages and towns are suitable for only single lane-traffic. The destruction of buildings will impede the movement of vehicular traffic. Embankments and cuts along the highways and railroads will impede vehicular movement because of the steep slopes.

(4) **Key terrain features.**

(a) HILL 500 (NB6233) and HILL 511 (NB6232) control the secondary highway network between HEMBOLDSHAUSEN (NB6734), RANSBACH (NB7431), and SCHENKLINGSFELD (NB5930). They also provide control and canalization of the AAs in that area. The mission will be seriously jeopardized if these areas are not secured.

(b) HILL 524 (NB6136) provides control of a major AA to BAD HERSFELD, a major road junction located in the town of FRIEDEWALD (NB6037), and traffic on Highway 62. HILL 524 provides canalization in conjunction with HILL 500 and the major ridge line to the immediate

Figure 4-4. Extract — Paragraph 3 (continued).

north. It is key terrain if our tactical plans call for either a main attack or a supporting attack in the area.

(c) The north ridge line from approximately NB5535 to NB6442 controls the high-speed AUTOBAHN throughout most of the battlefield area. Control of this ridge is necessary to continuation of defensive measures.

(d) All bridges and overpasses within the area are a key factor to delaying operations until destroyed. Destruction of these facilities will slow the advance of tanks and motorized forces.

(5) Avenues of approach.

(a) Available to enemy into our positions.

1 Approach A. Axis HILL 511 (NB627326) – HILL 399 (NB575323) – HILL 422 (NB557331) – PETERSBERG (NB520350) – BAD HERSFELD. This avenue is a high-speed approach into BAD HERSFELD and provides good observation and FofFs except in the wooded areas between HILL 399 and the AUTOBAHN road junction (NB530343). Excellent concealment and cover are obtained in that wooded area. Once the enemy reaches the high ground east of PETERSBERG, it will have excellent observation and fire into BAD HERSFELD and the high ground around the city. This AA has several severe slopes which may slow down the enemy's advance. It provides adequate maneuver space for an enemy regimental-sized unit.

2 Approach B. Axis HILL 524 (NB611363) – HILL 406 (NB563354) – PETERSBERG (NB520350) – BAD HERSFELD. The avenue of approach is on high ground into BAD HERSFELD and provides excellent observation and FofFs. It would provide control of Highway 62, a high-speed armor approach into BAD HERSFELD. Once HILL 389 (NB563354) is seized, it provides a downhill approach all the way into BAD HERSFELD. This approach provides adequate maneuver space for a regimental-sized unit.

3 Approach C. Axis AUTOBAHN – junction with Highway 62 (NB553353) – BAD HERSFELD. *This approach is a high-speed armor approach; use of it would require control of the high ground both north and south of the AUTOBAHN. Observation and FofFs from the high ground north and south are good. Using the high ground north and south would provide adequate maneuver space for a regimental-sized unit.*

(b) HILL 524 (NB611363) provides control of a major AA to BAD HERSFELD, a major road junction located in the town of FRIEDEWALD (NB606374), and traffic on Highway 62. HILL 524 provides canalization in conjunction with HILL 500 and the major ridge line to the immediate north.

(c) Available to friendly forces into the enemy's positions. At this time you would consider any and all axis of advance that friendly forces may use to counter the enemy's attack. The description and discussion would follow the same format as just described for the enemy's avenues.

Figure 4-4. Extract – Paragraph 3 (continued).

b. Combat Service Support Aspects.

(1) Personnel. The pro-western population can provide skilled industrial workers.

(2) Logistics. Because the battlefield area is primarily an agricultural area, it is possible limited quantities of food may be available to supplement troop rations.

(3) CMO. The population will view the destruction of their homes and industry as a result of enemy activities. Care should be taken to ensure actual military targets exist in the villages and towns before destroying them; otherwise, the populace will react unfavorably to what appears to be senseless destruction of personal and community property.

Figure 4-4. Extract – Paragraph 3 (concluded).

c. Paragraph 4 (Figure 4-5) is shown based on paragraph 2 (Figure 4-3) and paragraph 3 (Figure 4-4).

4. EFFECT OF CHARACTERISTICS OF THE AREA.

a. Effect on Enemy Courses of Action.

(1) Effect on enemy attack.

(a) The weather will favor the attack. Poor visibility during rain and ground fog provides unobserved forward movement of enemy forces. Weather will restrict the use of friendly air against ground elements between 01 and 02 Sep. Surface winds favor the enemy's use of chemical and bacteriological (CB) agents but winds aloft do not favor the enemy's use of nuclear weapons. Precipitation will reduce trafficability.

(b) The terrain in the battlefield area does not favor the attack since the relief causes canalization of forces. In many areas, the enemy's observation and FofFs are limited. Enemy forces will have to cross or bypass several areas where defenders will have excellent fields of fire. High terrain on HILLS 500, 511, 524, and the ridge line north of the AUTOBAHN will have to be seized to sustain the attack.

(c) Best AA. Axis HILL 511 – HILL 399 – HILL 422 – PETERSBERG – BAD HERSFELD.

(2) Effect on enemy defense. Enemy continues to upgrade his defensive positions. The WERRA river severely restricts the crossing of armored units and crossing areas are highly defended. The best AA is vic NB6734-NB7035.

(3) Effect on enemy withdrawal. Enemy has extensive road networks to facilitate retrograde and delay operations. Both natural and manmade obstacles will provide excellent defensive and delaying areas.

Figure 4-5. Prepared paragraph 4.

(4) Effect on enemy use of air. Weather will severely restrict the use of air support on 01-02 Sep. After this period aerial observation and close air support will be available.

(5) Effect on enemy use of nuclear weapons. Use of nuclear weapons will be restricted by winds aloft.

(6) Effect on enemy use of CB agents. Weather and terrain favor the enemy's use of these agents. Heavy precipitation on 01-02 Sep will reduce the effectiveness of nonpersistent agents.

(7) Effect on enemy use of guerrilla forces. Pro-western population will severely restrict the possibility of enemy being able to use these in the battlefield area.

b. Effect on Own Courses of Action.

(1) Effect of friendly delay. The terrain is favorable to our forces delaying since it will cause canalization of the attacking forces and provide excellent observation and FofFs in the initial delay positions. Subsequent positions have excellent concealment and cover and should provide fair observation and FofFs. Direct-fire weapons will be limited in all forested areas. Once the enemy has taken the high ground overlooking the FULDA river, delaying friendly forces will be under observation by enemy forces. If withdrawal is made during periods of fog, darkness, or precipitation, friendly forces will be afforded additional concealment.

(2) Effect on friendly use of air. Friendly forces will benefit from friendly air at all times except during 01-02 Sep.

(3) Effect on friendly use of armor. Friendly armor will be able to provide direct support antitank fires once emplaced on the west bank of the FULDA river. Excellent concealment and cover are afforded by the forests.

(4) Effect on friendly use of nuclear weapons. Winds are favorable for the use of tactical nuclear weapons.

(5) Effect on friendly use of chemical and biological agents. Surface winds do not favor the use of these agents.

Figure 4-5. Prepared paragraph 4 (concluded).

d. As you can see from the foregoing, many possibilities are available for you to exercise your abilities in preparing paragraph 4. What is critical in this paragraph is that you discuss all the courses of action available to the enemy to include air, armor, nuclear fires, bacteriological and chemical agents, and guerrillas.

e. In the presentation of the own courses of action, the mission statement will determine what is presented. However, you must still present information on friendly air, armor, nuclear fires, bacteriological and chemical agents, and irregular forces, just as you must do for the enemy.

PART B: ANALYSIS ENDING DATA

1. Acknowledgement instructions are included if distributed outside the headquarters. Normally, the word "Acknowledge" is sufficient.
2. The signature block contains the name and rank of the commander and appears on all copies of the analysis if distributed outside the headquarters. If not distributed outside the headquarters, it is signed by the G2/S2.
3. Authentication by the G2/S2 is required only if the analysis has not been signed by the commander and is to be distributed outside the headquarters.
4. Annexes are listed by letter and title.
5. Distribution instructions may refer to a standard distribution list.
6. Classification must be placed at the top and bottom center of both the front and back pages, in large than any other lettering (Figure 4-6).

(5) Effect of chemical agents. Weather conditions are favorable for our use of chemicals.

Acknowledge.

MANN
MG

OFFICIAL:

/s/ Foster
FOSTER
G2

Annex: A-Climatic Summary (omitted)
B-Relief Overlay (omitted)
C-Drainage Overlay (omitted)
D-Slope Overlay (omitted)
E-Vegetation Overlay (omitted)
F-Vegetation Impeding Movement Overlay (omitted)
G-Soils Overlay (omitted)
H-Built-up Areas and LOC Overlay (omitted)
I-Horizontal Visibility Overlay (omitted)
J-Fog Overlay (omitted)
K-Canopy Closure Overlay (omitted)
L-Combined Obstacles Overlay (omitted)
M-Weather Effects on Cross Country Movement Overlay (omitted)
N-Avenues of Approach Overlay (omitted)

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(CLASSIFICATION)

Figure 4-6. Analysis ending data.

LESSON 4

PRACTICE EXERCISE

The following items will test your grasp of the material covered in this lesson. There is only one correct answer for each item. When you have completed the exercise, check your answers with the answer key that follows. If you answer any item incorrectly, study again that part of the lesson which contains the portion involved.

1. What should you list in the analysis for any enemy attack course of action?
 - A. Enemy MC.
 - B. Axis of advance.
 - C. Area of analysis.
 - D. Best AA.
 2. What item of information dictates the course of action friendly forces will take when preparing paragraph 4b, Effects on Own Course of Action?
 - A. Mission statement.
 - B. Combat service support aspects.
 - C. Tactical aspects.
 - D. Enemy courses of action.
 3. Who should sign the analysis if it is not distributed outside the headquarters?
 - A. Commander.
 - B. G2.
 - C. G3.
 - D. G5
 4. Which items should you present in the analysis for defensive courses of action?
-

LESSON 4

PRACTICE EXERCISE

ANSWER KEY AND FEEDBACK

<u>Item</u>	<u>Correct Answer and Feedback</u>
1.	D. You should always list the best AA in the analysis for any enemy attack course of action (page 4-2, note).
2.	A. The mission statement dictates the course of action friendly forces must take when preparing paragraph 4b (page 4-4, para 3).
3.	B. The G2 should sign the analysis if not distributed outside the headquarters (page 4-15, para 3).
4.	You should present the best defensible areas and the best AAs leading to these areas (page 4-2, note).